AMBERLINE

PVC Installation Guide

2024

Table of Contents

The goal of this document is to provide clear guidance on how to handle and install Amberline products safely and efficiently. Failure to read, understand, and apply this guideline may void the warranty.

1. Requirements and warnings

You're receiving high-performance windows and doors with distinctive operational features. It's essential to understand that the instructions for handling, storing, and installing these products may require different procedures compared to other window and door products you've encountered. Please take the time to thoroughly review these instructions before receiving the products to ensure proper handling, storage, and installation of Amberline products.

Failure to read, understand, and apply this guideline may void the warranty, as improper handling, storage, and installation may result in reduced operation, performance, and longevity of Amberline products.

2. Receiving, handling, and storage.

2.1 Container and product inspection

Carefully inspect the products after receiving the container. Any visible defects to products and/or containers have to be reported to Amberline LLC within 24 hours of delivery. Take photos of both unloaded products and the container.

Important!
If products inside the container are or appear damaged do not unload the container and contact Amberline LLC immediately for further assistance.

If no damages are present at this stage, you can proceed with unloading the products. Remember to take photos of the open container before unloading and continuously when unloading it. After unloading inspect the products for any damage marks that may have appeared during transportation.

Check the completeness of the delivery against the transport list provided by our company to ensure you have received all the specified items. Any missing items must be reported to Amberline LLC immediately.

2.2 Best practices and safety remarks for unloading the products

Follow the tips given below to ensure a safe unloading process:

- choose a secure place with an even surface for the unloading
- assemble enough people to unload the biggest products manually
- prepare enough indoor space to store all of the products
- use equipment with the capacity to lift and/or support all the products and pallets
- protect the accessories and small parts from getting lost or destroyed in the process
- you may need to support pallet legs with wooden blocks due to different product weights

Important!
Never place the pallets on muddy/sandy surfaces. Unloaded goods must be protected against hazards such as water, rain, sand, and sun.

A. Products on pallets
Remove wooden frames and airbags protecting goods against damages during shipment. Then carefully and gradually (pallet after pallet) remove the ratchet straps protecting the pallets in the container. Standard products, transported on wooden pallets, are prepared to be unloaded with a forklift. Never remove protective film or plastic tapes from the pallets before unloading them from the container.

B. Large products
Due to large dimensions, some products may be attached to the back of the pallet. These have to be unloaded manually by a minimum of two people. To do this, they have to be detached carefully from the pallet. After unloading, make sure they are placed in a secure place and protected from falling.
Extremely large products are often attached to the container wall during transportation. These should be carried out by more than two people and may need to be unloaded diagonally through the mouth of the container. To do that detach the ratchet straps carefully while protecting the product from falling manually. Make sure you can lift the product and equally/uniformly support the frame to protect it from falling, bending, or cracking. Check if you have enough space in the container to move and manipulate the product. After unloading the product must be placed in a secure place and again protected from falling down.

Important!
Never leave products unsecured during unloading.

C. Glass in crates
Glass is always transported in wooden crates with a base prepared for unloading with a forklift. Follow the procedure described in point A (Products on pallets). Never leave glass in direct exposition to intense sunlight as it may cause thermal breaks.

D. Other items
Some products, like long profiles, small items, etc., may be transported separately or in carton boxes. All of these products should be unloaded manually. Remember to always check the completeness and destination with the packing list.

Important!
Never use a forklift for products that are not well supported, such as long profiles or short items, as they may get damaged or lost during unloading with a forklift.

2.3 Best practices and safety remarks for storing the products.

Amberline products are transported on wooden pallets. When unloading or moving, always place the pallets with products on a level and even surface in a secure place. If the surface is not even, always

use a shim to keep the products or the pallets in a vertical position and to protect them from tipping or falling.

All the products must be stored in a **vertical** position, preferably on the original pallets with protective foil and belts. They must be protected from direct sunlight, rain, dirt, and extreme temperatures. Do not leave the products and accessories unsecured.

Products are allowed to lean against each other if placed at the same angle, however, it is forbidden to stack more than eight frames of similar dimensions against each other. Additionally, make sure you never place a smaller product on a glazed part of a bigger product.

Make sure you maintain the distance between each frame. Amberline windows are always transported with foam distance block that creates a gap between the windows. It should not be removed for storage as it prevents close contact between windows and allows for ventilation.

Make sure to always protect stored windows from other building materials that may damage the profiles or the glass.

2.4 Best practices and safety remarks for handling and moving the products

A minimum of two people is needed to unload a product from the pallet. One person (or more people depending on the size) should hold the product still while the other one loosens and removes the protective elements.

Important!
Never leave detached or unprotected products as they may fall and consequently get damaged.
Never lay the products flat on a surface as it may cause bending of the product and/or cracks.

Fig. 2. Safe handling

The installers are responsible for the safe handling of the products, for the choice of means and equipment needed to carry or move them, as well as for the safety of workers.

Depending on the size and weight, product should be carried by a minimum of two people. Make sure to handle the windows and the products carefully to prevent them from cracking or bending. Always lift them gently in a vertical position with the sashes closed. Do not drop the products. All Amberline windows are provided with carrying handles to help you with moving them.

Fig. 3. Carrying handles:

All products have a grey sub-profile screwed to the bottom part of the frame to protect products from dirt and scratches. It should be removed only before placing the window/door in the rough opening.

A. Products with mullions and transoms

When lifting products with vertical mullions, always protect the joints between the mullion and the horizontal part of the frame. Never lift units by the top part of the frame or by a horizontal transom. Ensure the weight of the product is distributed and supported evenly, if you lift the frames by ends only, frames will crack.

B. Using vacuum cups

Many installers recommend the use of vacuum cups as the safest way to carry windows and doors with glass or the glass itself. To apply them correctly on the glass, remove any protective plastic film. Vacuum cups have to be placed evenly at the corners of the product. The window frame has to be supported from the bottom. Partially glazed products can also be carried with the help of vacuum cups, but the unglazed part has to be supported and joints between mullion and frame protected to prevent cracking.

C. Products with nail flanges

Some products have nail flanges all around the frame. These will have two grey transport sub-profiles screwed to the bottom part of the frame to protect the bottom nail flange from breaking. Do not unscrew it unless you are preparing the window for installation. When handling and moving a window with nail flanges be extremely careful not to break or damage them.

3. Before you start the installation

Before commencing installation, please take the time to thoroughly review these instructions to ensure a successful installation process.

Installation tasks should be executed by qualified installers possessing at least a basic understanding of window structures and installation methods. They must be able to: use specified tools listed in the “Glossary” section, take precise measurements, and refer to the provided guidelines. On-site installation training by an Amberline LLC representative is required before starting the installation procedures.

Additionally, as glass is the most vulnerable part of the window, get familiar with potential glass-related issues that may arise at the job site and how to prevent them (see section 9.3).

Important!

Manufacturer does not take the responsibility for problems arising from improper installation.

3.1 Pre-installation work

3.1.1 Pre-installation inspection

As mentioned in the "Receiving, handling and storage" section make sure to conduct a thorough inspection of the windows and doors upon receipt. Any observable defects in the glass or framing must be reported to Amberline LLC within 24 hours of receiving the products.

Additionally, before installation perform another inspection to ensure that products haven't sustained any damage during storage on the job site and are in optimal condition before the installation. Do not install windows with visible defects but contact Amberline LLC. Installation of a defective window will void the warranty unless agreed otherwise with the manufacturer. Damage to Amberline products caused by inadequate clearances or building structure deformations is not covered by warranty.

Make sure to check:

- the profile structure on the inside and outside (if there are any scratches)
- the frame and sash (do not install if it is broken or badly damaged)
- the glass (do not install cracked/broken glass screens)

Additionally, make sure to check:

- window dimensions and window ID against the dedicated window opening
- if the window and rough opening match shops and architectural drawings (if provided; refer to the detailed explanation below)

Shop and architectural drawings:

Amberline products are designed according to the information provided when placing the order. You may have received shop drawings from Amberline LLC containing important installation information, emphasizing the specific installation system of the project you are working on. Refer to them and make sure you follow the instructions presented in that document.

Amberline windows and other products:

Our products guarantee very good performance and comfort of use. When choosing the installation method and the sealants always make sure these are suitable for our products and will not damage them in any way. Additionally, any other items installed around and/or in close contact with our products cannot interfere with their functioning and/or damage them in any way. It is the installer's responsibility to select compatible sealants and products.

Pressure equalization and drainage holes:

Our products have small holes in the outer horizontal parts of the frame and the transom. Never cover or seal them with any substances. They equalize pressure in frame chambers and are an essential part of the water drainage system.

3.1.2 Rough opening inspection & plumb, level, and square installation

Amberline products must be installed plumb, level, and square to operate properly. The installer must install them this way even if openings are not square, and walls are not straight or plumb. Therefore, you should first examine all rough openings to ensure they are perfectly square, with a level base and vertical sides. Use a long level vertically to check if the outer surface of the wall is both straight and vertical at the junctions of windows and doors. In the case of a rough opening not meeting these criteria make sure to adjust the thickness of the supporting shims to ensure that the window or door frame is installed in a square, level, and plumb way, regardless of any imperfections of the initial opening. Additionally, if the outer surface of a wall displays any bowing or tilting, position the window to be level.

Fig. 4. Square:

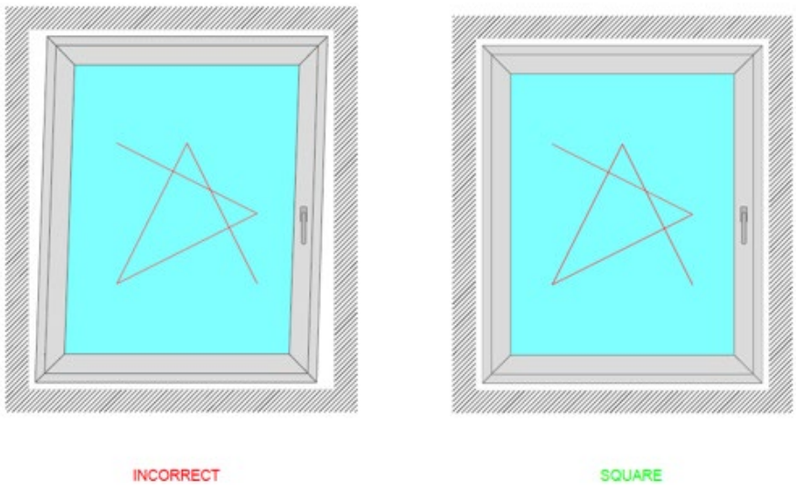


Fig. 5. Level:

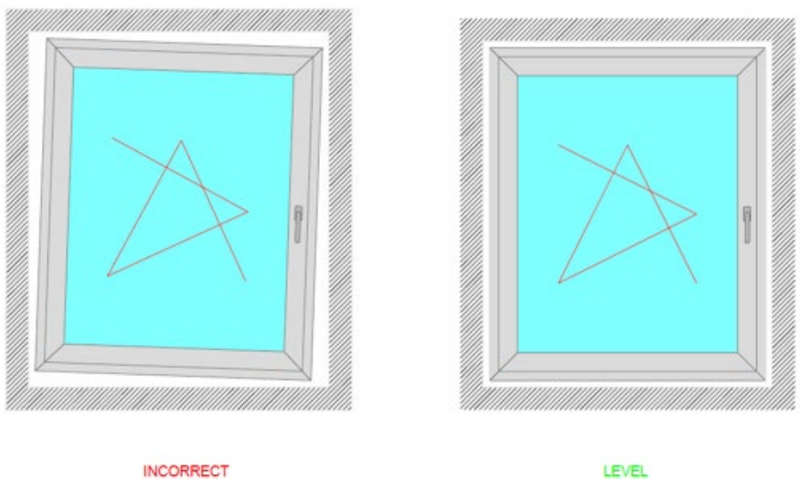
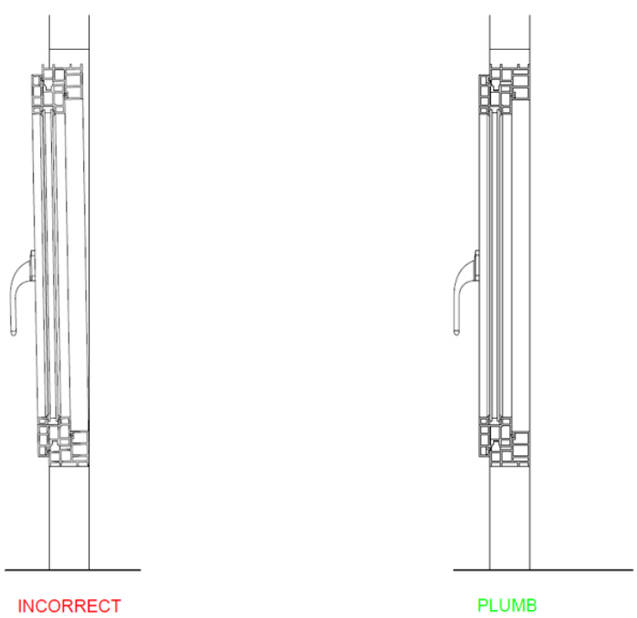


Fig. 6. Plumb:



In some cases, if the rough openings are visibly imperfect, they may need to be adjusted before the installation. In that case make sure to inform the general contractor or the party responsible for construction to correct it.

Additionally make sure you take into account possible discrepancies in size, level, and squareness of the rough opening. Below you can see the recommended clearances between the window/door frame and the rough opening:

- Minimum clearance: 1/2" (12 mm)
- Maximum clearance: 5/8" (16 mm)

Important!
Always make sure the window is installed correctly, any deviations from this will affect its functionality and tightness.

3.1.2 Optional sash and glass removal for installation

We recommend removing the sash or the IGU glass (unopenable fixed windows) from the frame. It is not obligatory, but it is a common practice as it makes the window lighter and consequently easier to handle and move. Refer to the appendix (section 9.1) for detailed instructions on sash and glass removal.

3.2 Glossary

3.2.1 Materials provided by Amberline

PRODUCTS	ACCESSORIES
Window	Coupling Systems
Juliet Balcony	Installation Handles
Inswing Balcony Door	Screws for Straps
Outswing Balcony Door	Expanding Tape
Entrance Door	PU Sealant
Sliding Door	Gasket
Curtain Wall	Anchoring Straps
Double IGU	Water Weep Caps
Triple IGU	Aluminum Sill
	Gasket for Sill
	Screws for Aluminum
	Caps for Screws
	Fly Screens and Clips for Fly Screens
	Window Handles
	Caps for Hinges

3.1.2 Tools provided by installers

Impact Driver	Screw Driver
Laser Level	Spirit Level
Hex 4mm Key – 5/32 In	Measuring Tape
Vacuum Cups	Sill Suport Shims

Shim Blocks	Caulking and Backer Rod
Fasteners for Amberline Strap Anchors (2 per anchor)*:	
Wood substrates: #10-13 x 1-1/2" Pan head screws	
Steel studs: #10-13 x 3/4" pan head screws	
Concrete: 1/4" x 1-1/4" Kwik Con II or equal	

**All fasteners to be corrosion resistant and selected for compatibility with the substrate.*

4 Installation

This part will show you how to install Amberline windows and doors correctly. It describes three different installation systems:

1. Straps
2. Nail flanges (with and without straps)
3. Through the frame screws.

The installation method has been chosen when placing the order, so make to follow the appropriate installation method (if you are unsure about the installation technique contact Amberline LLC).

Before proceeding with installation make sure that:

- The environment in which you will install the products is safe and clean.
- There is enough space to safely install the products (Large constructions require more space to safely handle and install them)
- The product you will be installing has not been damaged during storage and handling.
- That you have enough space to safely store the window/door you will be installing or to safely store the removed sash. Never leave the windows, frames or sashes unsecured.
- That you have people to help you with handling the products. Large products may require more than two people to handle and install.
- That the rough openings are prepared correctly for each weight and dimension of the product. Remember that each product requires a minimum 1/2" and maximum 5/8" clearance.
- That you have checked the barrier membranes' and flashings' installation. You can proceed with installation only if these are installed properly and according to local norms.
- That you have all the necessary tools and accessories to install a window at hand.

Important!

After placing a window in the rough opening and positioning it properly (plumb, level and square) it must be fixed to the wall as soon as possible.

The installation of window/door must be accomplished within one day and by the same workers from start to the end. Incomplete installation can lead to product damage.

If you are given shop drawings, make sure to read and follow them as they may contain additional information important for a specific project.

After you make sure that all the conditions specified above have been fulfilled you can proceed with the installation. Make sure to follow the appropriate installation method for a specific project (if you are unsure about the installation technique contact Amberline LLC).

Important!

It is recommended to remove sashes (operable windows) or glazing (non-operable windows) for the installation with straps and nail flanges as it helps to correctly fix the window/door frame in the rough opening, especially in the case of large windows/doors.

It is obligatory to remove the sashes (operable windows) or glazing (non-operable windows) for the through the frame installation for fixed windows. Sash removal/deglazing is also obligatory for large windows and coupled constructions to guarantee correct window positioning and smooth installation process.

See the video on how to do this correctly:

Important!

Proper installation is essential for optimal window/door functioning in the future. When installing windows/doors you must check its positioning at each step to ensure the product will be installed in a plumb, level and square way. It is not always possible to achieve perfect conditions therefore small deviation from the plumb, level and square requirements is accepted.

The table below lists **the tolerances for window installation:**

Issue	Details	Tolerance
Window positioning	level	+/- 1/16" per 3'
	square	+/- 1/16" per 3'
	plumb	+/- 1/16" per 3'
Window sash overlap	5/16"	+/- 1/16" per 3'
Compression (sash to frame) 3/4"	sash gasket must be slightly squeezed	acceptable between 47/64" and 49/64" (between 18.5mm and 19.5mm)

4.1. Installation with straps

Tip: If possible, install windows with straps from the inside, it is safer and more comfortable.

Prepare selected window for installation. Inspect the product for any damages and verify its dimensions.

4.1.1 Straps Installation

Steps to follow in this type of installation:

1. Removing grey transportation profile from the bottom frame of the product
2. Removing glass and/or sashes
3. Placing straps on the window frame
4. Placing the window in the opening
5. Shimming and positioning the window in the rough opening
6. Fixing window to the wall with straps
7. Glazing and/or placing sash
8. Checking window functioning

To prepare the window for installation, please remove the grey transport profile screwed to the bottom frame:

The handling straps on each side of the window should also be removed – unscrewed or cut off

It is highly recommended to deglaze the window and to remove the sash from the frame of the product before installation. It makes the installation process safer and the window positioning easier.

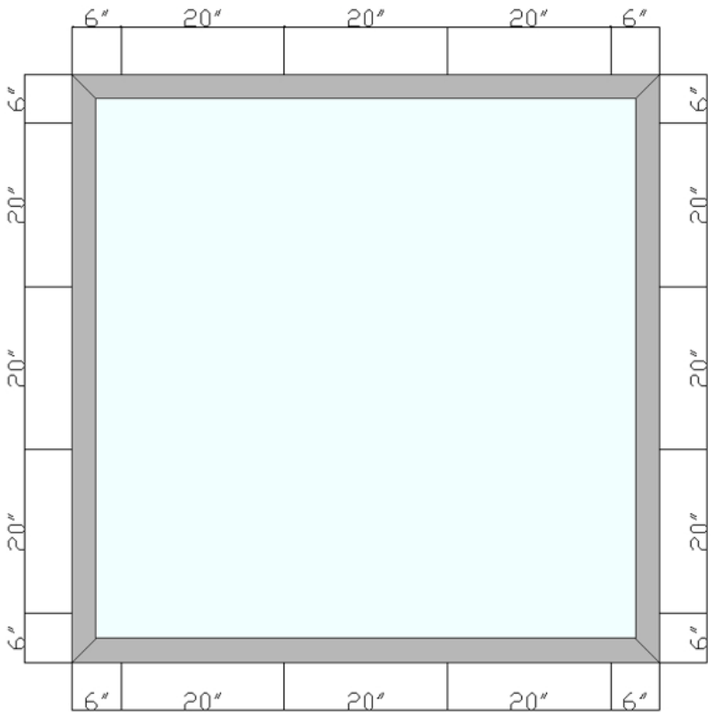
The next step is to screw the anchors to the product in the correct places. The distance between anchors should be 20" or less but make sure you place them correctly next to corners or mullions. You should have:

- two anchors installed 6" from each corner
- two anchors installed 6" from the corner around the mullion or coupling profile

Tip: Always start to place the straps from corners or mullion

Important!

Examine shop drawings provided by Amberline LLC to verify the anchor placement, it may be the case that certain constructions have specific anchoring requirements or anchoring requirements where the additional anchors can be placed further than 20" apart!

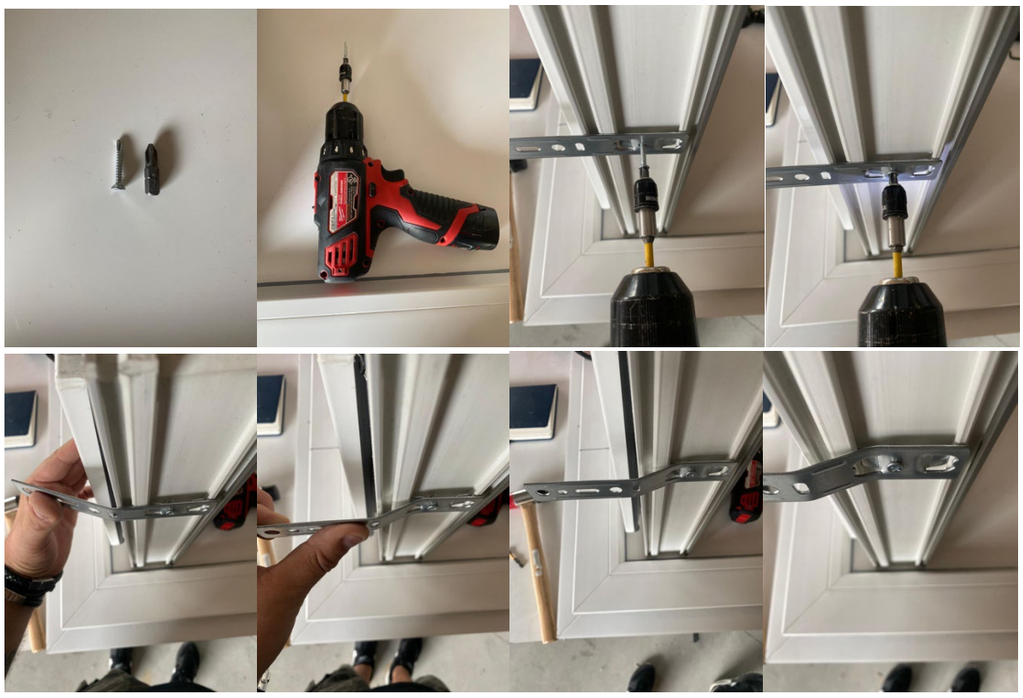


After you have located the correct placement points for the anchors, you can install them. Follow the steps below for each strap you need to attach to ensure a correct installation:

a. Attach the strap to the edge of the frame. To do that first look at the indoor side of the frame and locate the groove. Then place the straps in the groove as shown in the picture.

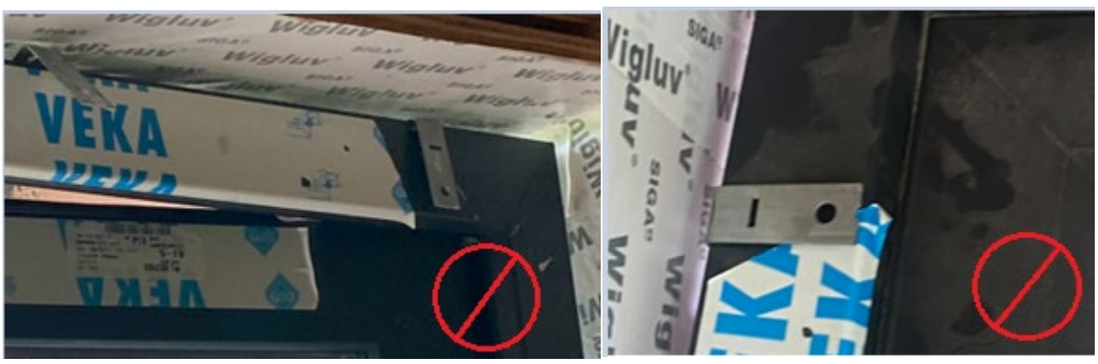
b. Then rotate the strap clockwise by 90 degrees. The longer part of the anchor must be pointing towards the inside of the building.

c. Use screws (provided with the straps) to secure the position of the strap. Then bend the strap in towards the center of the window or door by 1". Do not bend the straps by over-drive the screw. The strap must remain flat.

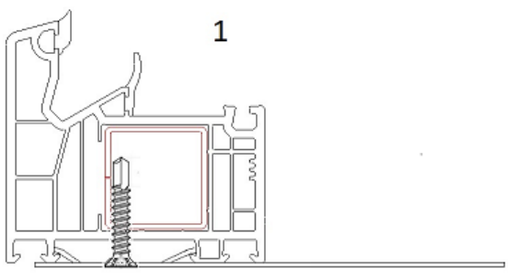


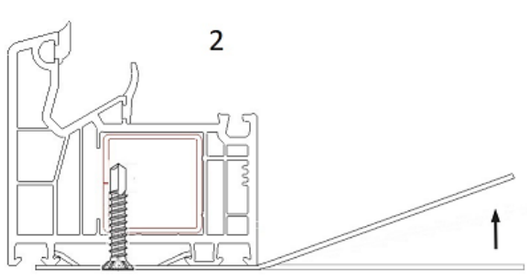
Important!

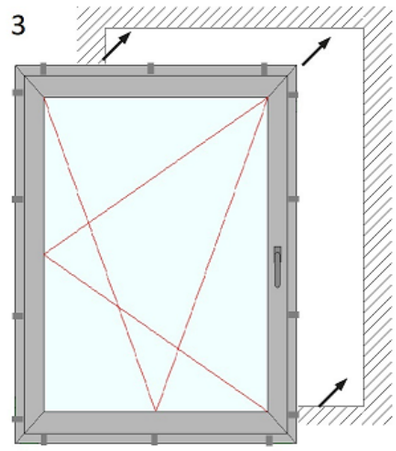
Do not bend the strap in by more than 1" as this may cause problems in the later stages of the installation as well as bowing of the frame. The pictures below show unacceptable straps bending!

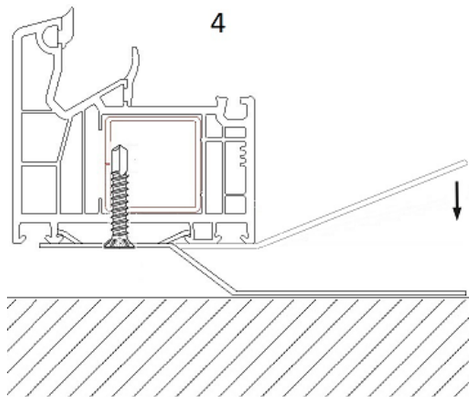


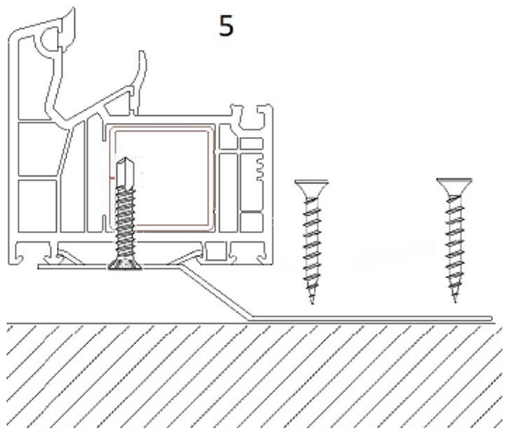
Correct straps bending:









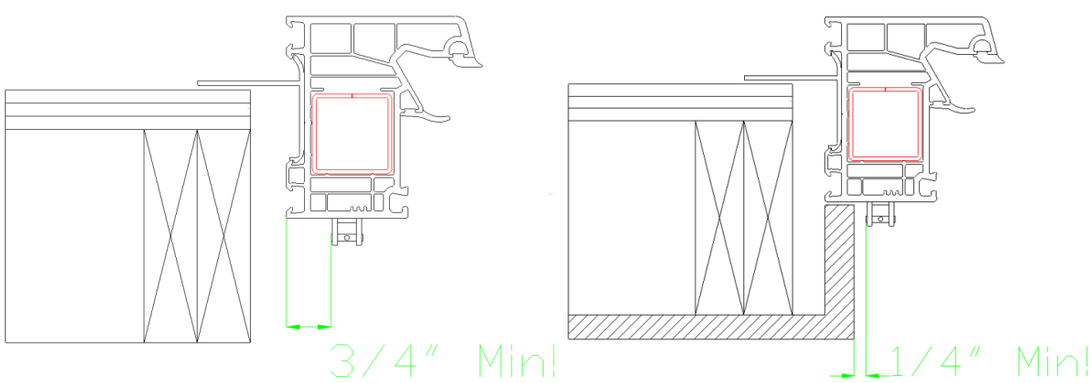


4.1.2 Window positioning

After you have fixed the straps to the window frame you can now insert the frames into the rough openings. First, using laser or spirit level check if the window is level, plumb and square. Additionally make sure that the window is placed in the center of the opening. Even if the rough opening is not level and plumb, always make sure the window is level, plumb and square. Use shims to keep it in the right position.

If you are installing a frame with hinges, you must maintain an appropriate clearance between hinges and finished wall for window to operate correctly. The minimum distance between finished material and the hinges should be 1/3". If the distance is shorter you will have to move the frame to the side.

Hinge clearance for inside opening windows:



Tip: Refer to the shop drawings (if provided) to see the details of the finished materials.

4.1.3 Shimming

It is necessary to place support shims under the installed products and to adjust their thickness to ensure that the product will be installed in a level and straight manner. When adjusting the thickness of the support shims check if the product is level and straight and if there is a minimum ½" gap between the top of the product and the rough opening. The minimum shim size should be 2" x 1-1'2". Remember never to place shims under strap anchors.

Make sure to handle the frames with caution when inserting the supporting shims, the use of excessive force may cause the frames to bend or get damaged.

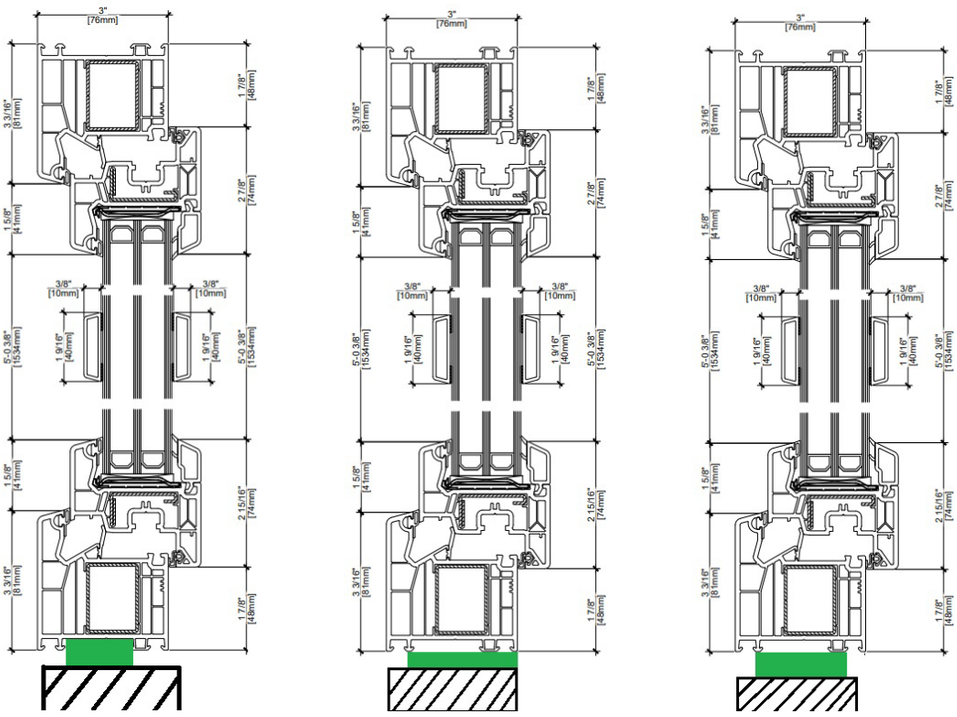
Important!

Lack of shimming may permanently damage the product and/or cause operational issues.

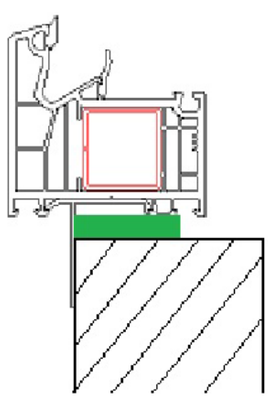
Tip: It is strongly recommended to place shims under the frame to support it equally at each point.

Tip: Make sure to use composite or plastic shims, using wood pr plywood shims is strictly forbidden.

Correctly placed shims are shown below:



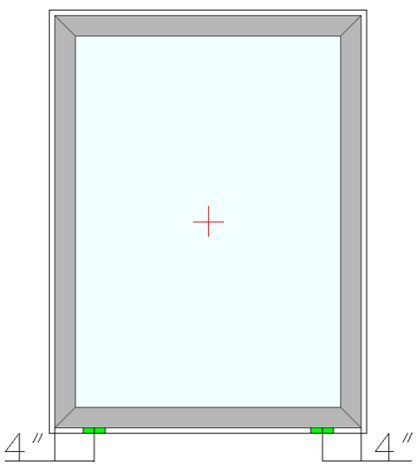
Shims under window with nail flange:



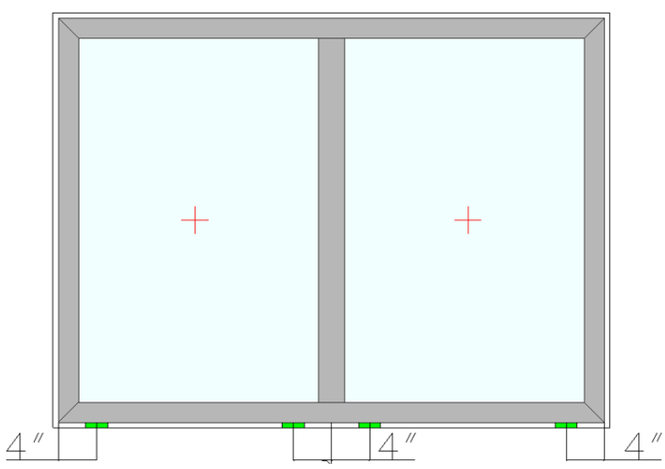
Fixed windows

Fixed products, make sure to place shims 4" away from each corner and 4" away from the center of the mullion. These shims provide extra support for the weight of the glass and align with the glass supports installed inside the frame of the product. Make sure that the shims are placed a maximum of 1" away from the perfect placement to prevent bending of the sill.

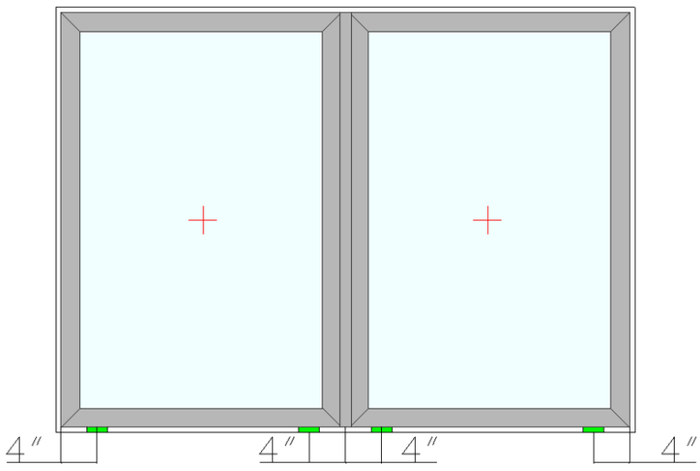
Fixed window



Fixed window with mullion

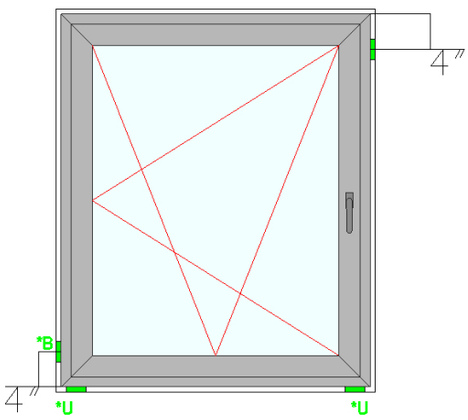


Fixed window with coupling

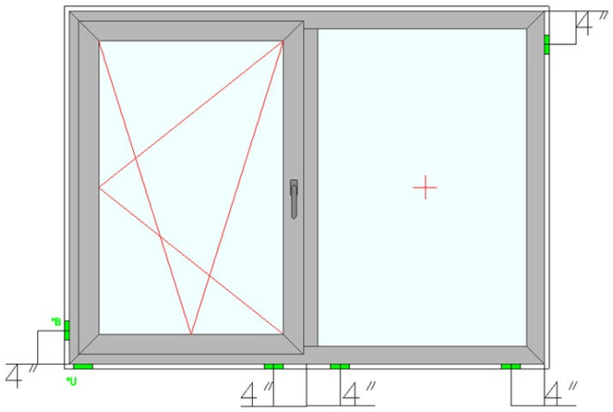


Operable units

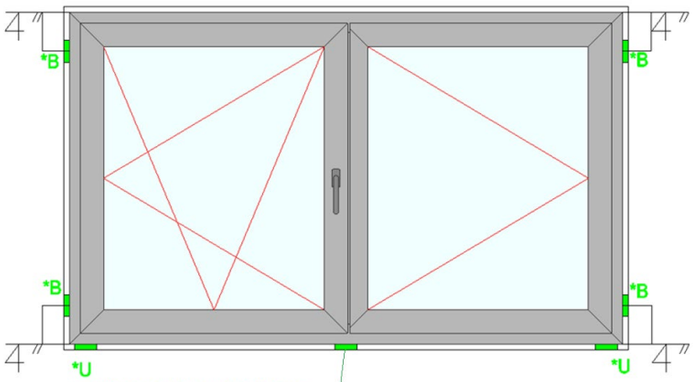
Products with hinges, first put shims under the vertical jambs to support the weight of the glass. Then place shims at the jambs (at the level of the top hinges) to prevent the frame from bending sideways. If the window is operable on one part and fixed on the other, the shims will be also needed at the jamb of the fixed part. This is because the weight of the sash can cause the frame of the product to move sideways.



U - Shims must be under hinge and jamb
B - Shim must be behind hinge



U - Shim must be under hinge and jamb
B - Shim must be behind hinge



Install center shim with 1/8" gap to bottom of level frame. It is needed for dilatation in case mullion profile expends. Use sealant to hold it in place.

U - Shim must be under hinge and jamb
B - Shim must be behind hinge

Important!

When the window/door is placed in the rough opening and is level, plumb and square, screw the straps to the wall. It is necessary if you want to continue to work on the window with an open sash. If you remove the sash for installation, make sure the window frame is screwed to the wall before placing the sash.

Incorrectly shimmed window:

4.1.4 Bending and fastening the straps to the rough opening

Requirements before fastening the straps

Our products must be installed in a plumb, level and square way regardless of any wall imperfections. Make sure you check that the product is placed this way with a laser or spirit level before fastening the straps.

After the frame is shimmed, you can proceed. Make sure window is secured and stationary before you start bending the straps. Each strap should first be bent towards the center of the window and then towards the wall so that it can lay flat to the wall. See below

Tip:

For screwing the straps to the wall we recommend Wafer Head fasteners with HCR-X coating ex. T-Star Plus or equivalent (https://spax.us/products/t-star-plus-wafer-head-hcr-x).

Important!

Correctly bent strap should lay flat on the rough opening, look at point 4.1.1.

In case you face different width of the gap you will need to adjust the straps to make sure that you anchor the product correctly and safely. You need to make sure that before you screw the strap in it is perfectly flat and adjacent to the side of the rough opening to avoid twisting of the frame.

The picture below shows incorrectly installed straps:

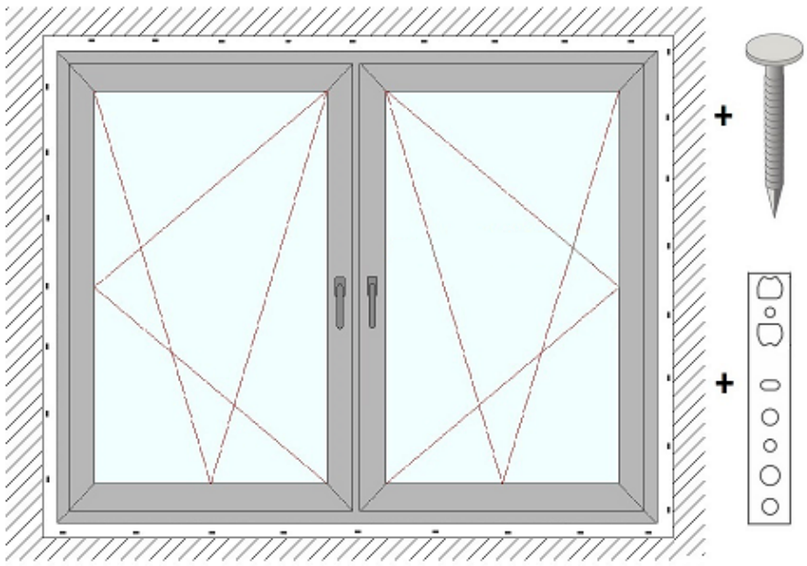
4.2. Installation with nail flanges

Steps to follow in this type of installation:

1. Choosing the sealing type
2. Removing two grey transportation profiles
3. Removing glass and/or sashes
4. Placing straps in the designated places
5. Placing the window in the opening
6. Shimming and positioning of the window in the rough opening
7. Fixing window to the wall with straps
8. Glazing and/or placing sash
9. Checking window functioning

This installation type must always be done from the outside of the building. Amberline nail flanges are installed to the outer edge of the window or door frame. They work as a weather resistant barrier as they prevent wind and water infiltration. Nail flanges ensure proper alignment of the window to the

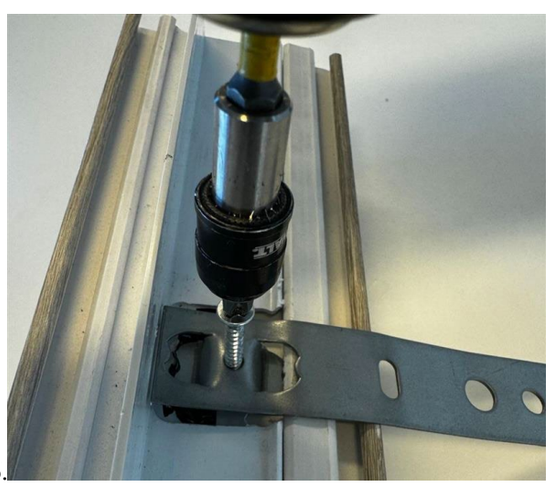
wall and make the window installation quicker and safer. The holes in them are also intended to make the installation easier.



Important

The installation of windows with nail flanges depends on the choice of the drainage system. The window can be either tightly screwed and sealed to the wall all around the window frame or only at the jambs and head to allow for the water to drain freely. To allow for proper water drainage in the second option make sure to keep the distance of minimum 1/8" (3 mm) between bottom nail flange and wall as a water drainage gap. Please check the shimming and sealing system indicated for this specific project with the General Contractor.

1. Installation of the straps for nail flanges in steps:

1. 
2. 
3. 
4. 
5. 

1. Find the correct places for strap placement
2. Place the strap in the hole parallel to the nail flange
3. Rotate the strap by 90 degrees
4. Make sure the strap is held in place with the hooks
5. Screw the strap to the window

Preparation for installation

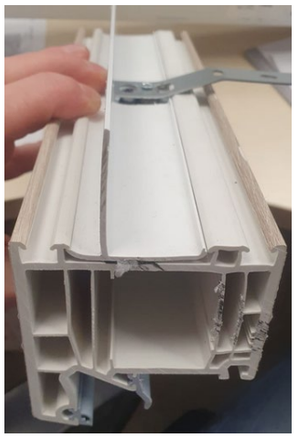
Before you proceed with the installation, make sure to review the rough opening according to rules from point 3. Additionally, always make sure that the external wall around the rough opening is clean, flat and even.

Tip: For safety and convenience during installation it is recommended to remove the sash or deglaze non-operable windows.

Tip: Be very gentle with the nail flanges as they can break easily if treated with too much force, especially in low temperatures. To protect the bottom nail flange, keep the grey protective profiles on until everything is ready for installation. **Breaking/ damaging the nail flange is a mechanical damage and thus voids the warranty.** If you still wish to repair the flange – see the video linked below.

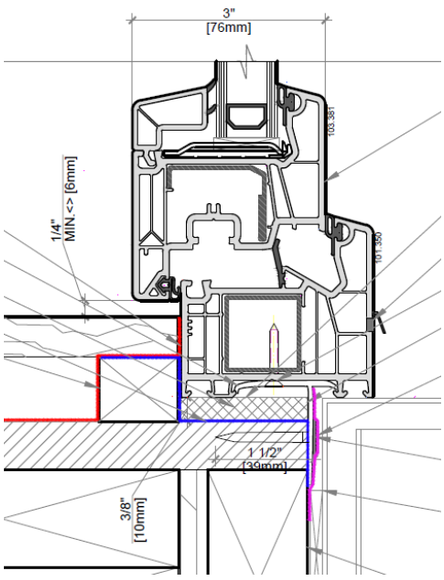
Repairing nail flanges:

- Once the grey transportation profiles are removed, put the straps into the designate places and screw them to the window frame. The straps used for installation with nail flanges differ from straps used for the installation with straps only. These straps do not need to be twisted, you should simply put them in the designated places and screw them to the window frame.



- Then proceed with slightly bending the straps towards the center of the window and place the window into the rough opening.
- Install the hard plastic shims in the designated places (see point 4.1.3 Shimming).
- Using a laser or spirit level determine if the window in the rough opening is square, level and plumb.
- Make sure that all holes are located on the wall and therefore that all the screws will enter the wood correctly.

Nail flanges overlap with the wall around the rough opening must be minimum ½" to ensure that the screws or nails can be fastened to the building. If this condition is not met ask the General Contractor to adjust the rough opening.



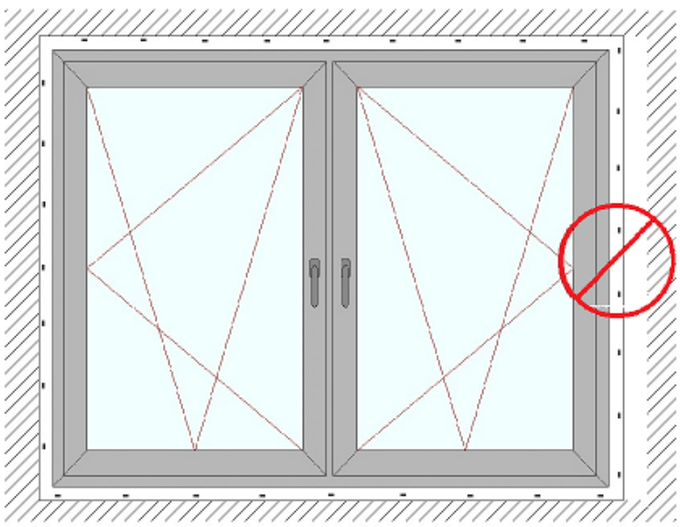
- Nail the window to the wall using the dedicated fasteners provided by others. You can use a nail gun for this. Act gently to avoid any damages.

Tip: To connect window to the wall it is recommended to use roofing nails #11 x 1-1/2" Electrogalvanized Flat Head Smooth Shank or equivalent.

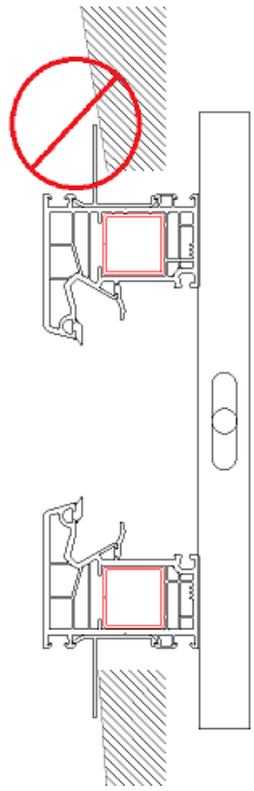
Important!

The pictures below show common mistakes that must be fixed before installing the door or window.

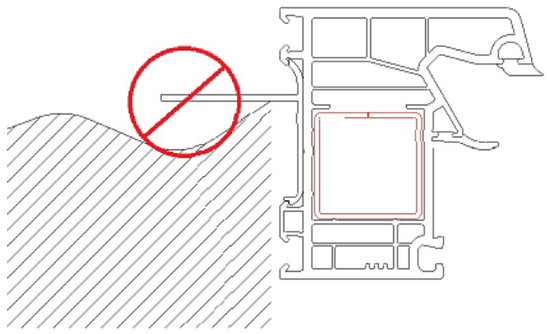
Mistake 1: Nail flange does not overlap the wall and there is a gap in the rough opening – screws do not enter into the wood:



Mistake 2: Nail flange does not fit tightly to the wall because the wall is not even:



Mistake 3: Wall is not plumb and so the window cannot be plumb either:



4.3. Installation with through frame screws

Steps to follow in this type of installation:

1. Removing glass and/or sashes
2. Placing the window in the opening
3. Shimming and positioning of the window in the rough opening
4. Fixing window to the wall with screws
5. Glazing and/or placing sash
6. Checking window functioning

You will be installing Amberline windows with “a through-frame screws” system. This system entails fixing the window to the wall with long screws provided by the manufacturer that go through the frame, and it can be done from the outside and inside of the building. All the windows are produced with holes of a ¼” of diameter drilled around the frame in which you will place long screws and fix the window to the frame of the rough opening.

This type of installation can also be used with nail flanges as an alternative method to mechanically connect the window to the wall.

Important!

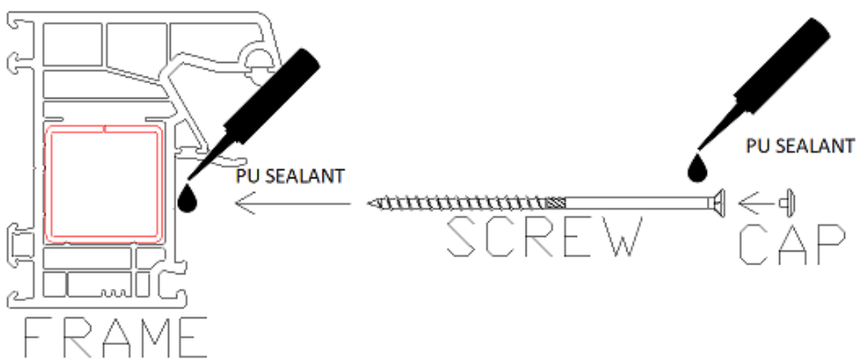
Make sure the rough opening is prepared correctly and the screws are strongly held in the wooden elements of the frame of rough opening. See point 3.1.2.

Tip: For safety and convenience during installation it is recommended to remove the sash for operational windows. You will need to deglaze the non-operable windows to get access to the drilled holes in the frame.

Before you proceed with the installation make sure to review the rough opening and the product according to rules from point 3.1.

- Remove the grey protective profile from the bottom of the frame and place the window in the opening.
- Install the hard plastic shims in the designated places (see Step 3. Shimming).
- Using a laser or spirit level determine if the window in the rough opening is square, level and plumb.
- If the position of the window is correct, you can proceed to screw the window to the wall with provided screws.

All the screws have caps (the color is similar to the core of the frame) that must be placed on them:



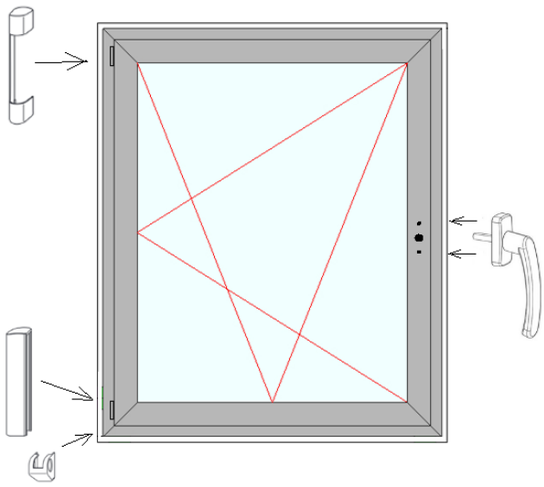
Tip: It is recommended to apply a drop of sealant to the frame before putting in the screw to ensure proper watertightness of the window as well as to the top of the screw before covering with cap.

Important!

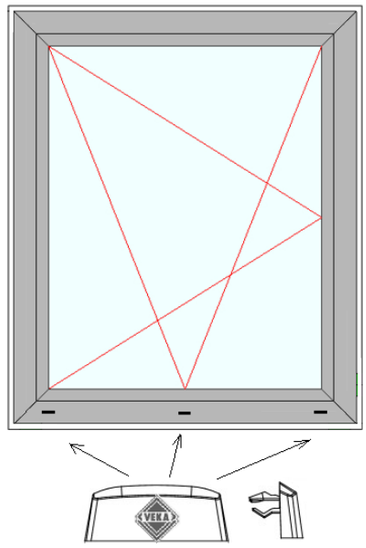
When screwing the frame to the wall make sure to be gentle. Applying too much force can cause the bending or damage of the frame.

When the window is installed, you can start installing accessories like handles, hinge covers, and water drainage weep caps.

Accessories inside:



Accessories outside:



Refer to the videos below for detailed instructions:

Handle installation:

Window covers:

Installation of weep caps is described under the point 5.7.

Tip: If you think that these accessories can be damaged at the construction site by other teams, install them after all the work is finished.

4.4. Inswing and outswing balcony door installation and entrance door

Important!

Entrance and balcony doors can have sidelights that can be connected with different types of couplings. Check the type of connection you are dealing with and follow the right coupling installation described in point 4.6.

The system of installation for balcony door depends on the system chosen when placing the order. These can be installed in three different ways described above:

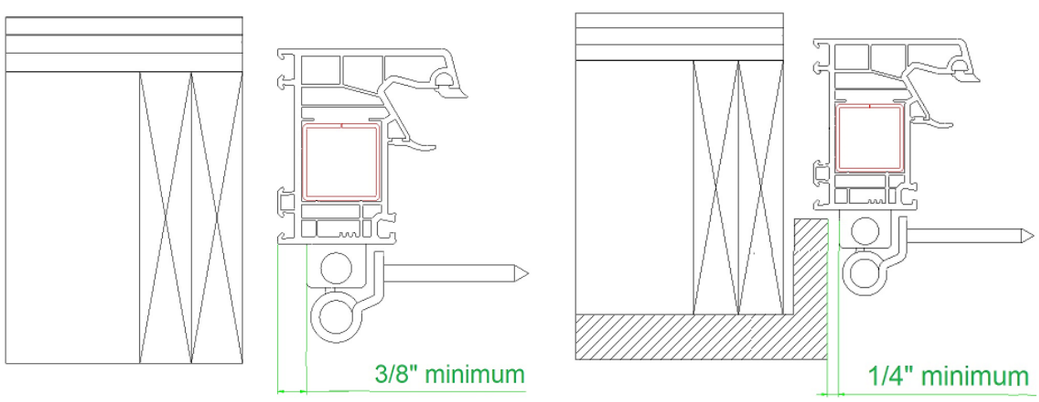
- with straps

- with through frame screws

The descriptions provided for each of these methods are also applicable in the case of balcony/entrance doors. The only difference is the shimming of the threshold and the clearance needed for the hinges in outswing doors.

Refer to the installation instructions described in the above points.

The figure below shows the required hinge clearance for inswing balcony/patio/regular doors.



4.5. Entrance door

Entrance doors need very precise and careful installation along with correct levelling to guarantee its long-term functioning. Proper levelling, shimming and fixing to the wall are essential here. It is very important to use strong and dedicated support system for the threshold. Our doors are always equipped with subprofiles. If you remove this profile for any reasons, always make sure that the surface under the threshold is stable, secure, flat and even so that the whole threshold is evenly supported.

Door has to support dynamic loads when the door is shut. Therefore, we recommend the installation to be either through frame with the holes pre-drilled at the factory (see point 4.3) or with straps (point 4.1). Follow the steps given there.

Door shimming

Special care must be paid to the door shimming, for specific instructions check point 4.4.1

When the door is fixed to the wall, check if:

- The door sash opens and closes without and problems
- You can lock the door without any problems
- The sash overlap is exactly 1/3”
- The gap between sash and threshold is equal at all points

If any of these conditions are not fulfilled the door installation will need to be corrected.

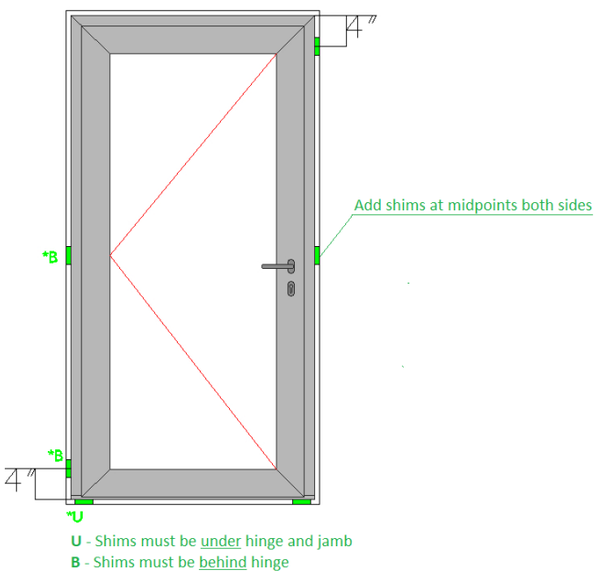
Tolerances for entrance and patio doors installation:

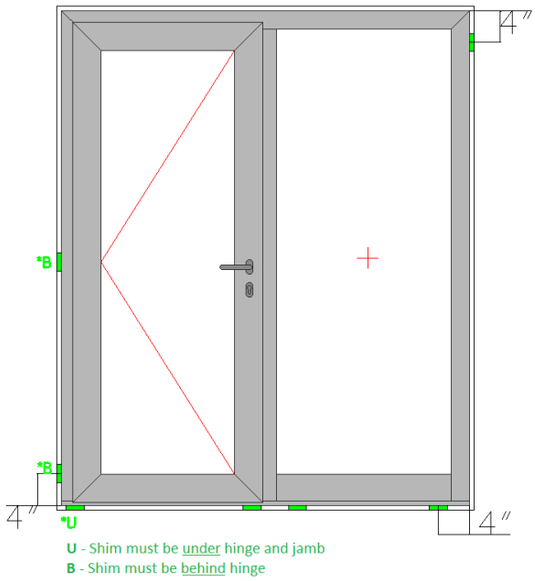
Issue	Details	Tolerance
Door positioning	level	+/- 1/16” mm per 3’
	square	+/- 1/16” mm per 3’
	plumb	+/- 1/16” mm per 3’
Door sash overlap (top, bottom, side)	5/16””	+/- 1/16” mm per 3’
Bottom sash overlap (low threshold)	25/64”	max. 7/16”
Threshold	brush floats easily on the threshold	No gap or brush deformation
	no deformation on threshold	Straight line in level
Compression (sash to frame) 3/4”	sash gasket must be slightly squeezed	acceptable between 47/64” and 49/64” (between 18.5mm and 19.5mm)

4.5.1 Shimming entrance doors and balcony doors with a low threshold

Low threshold is the most **exploited and vulnerable** part of the product. Therefore, it must be well supported during the installation to avoid problems related to the lack of tightness or scratches in the future. The figure below shows the shimming system for these doors.

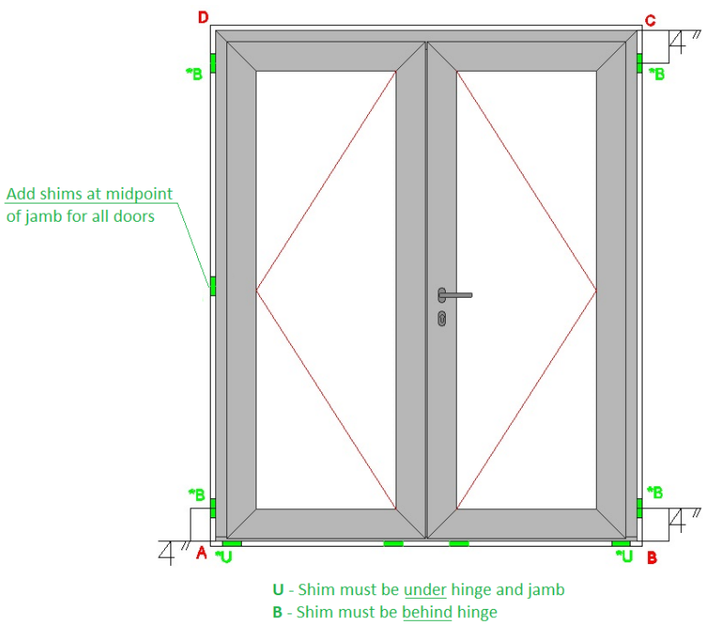
For doors first put shims under the vertical jambs to support the weight of the glass. Only then place shims at the jambs to prevent the frame from bending sideways. Make sure that the shims are placed a maximum 1” away from the perfect placement to prevent bending of the sill and jambs. Additionally, you are required to place shims behind hinges and at the midpoints due to the weight of the sash and its frequent operations.





Tip: It is strongly recommended to use additional shims in the middle of the door jambs. It will make the connection stronger and more secure preventing break-ins and future operational problem due to building settlement.

When shimming the patio doors with two operable sashes, make sure that the bottom part of the frame is also supported in the middle with an additional shim:



When you are installing a door always make sure you start by fixing the bottom part horizontally. Only then you can start shimming the door. After shimming one the bottom corners proceed with shimming the opposite top corner, then repeat the process for the remaining corners (the order should be ACBD or BDAC).

Important!

When the door is fixed to the wall always check the sash overlap and the adherence of the sash to the frame. If the sash overlap is uneven and the adherence is imperfect, you will have to correct the installation to make the sash adheres to the frame evenly and correctly.

Incorrectly shimmed door:

4.6. Coupled windows and doors

Couplings are required either when windows or doors exceed maximum dimensions established by the profile and fitting suppliers or to help with installation of large or heavy products. The choice of the coupling depends on the overall area of the construction and is very precisely described by the suppliers. Only correctly installed couplings will guarantee the watertightness of the product.

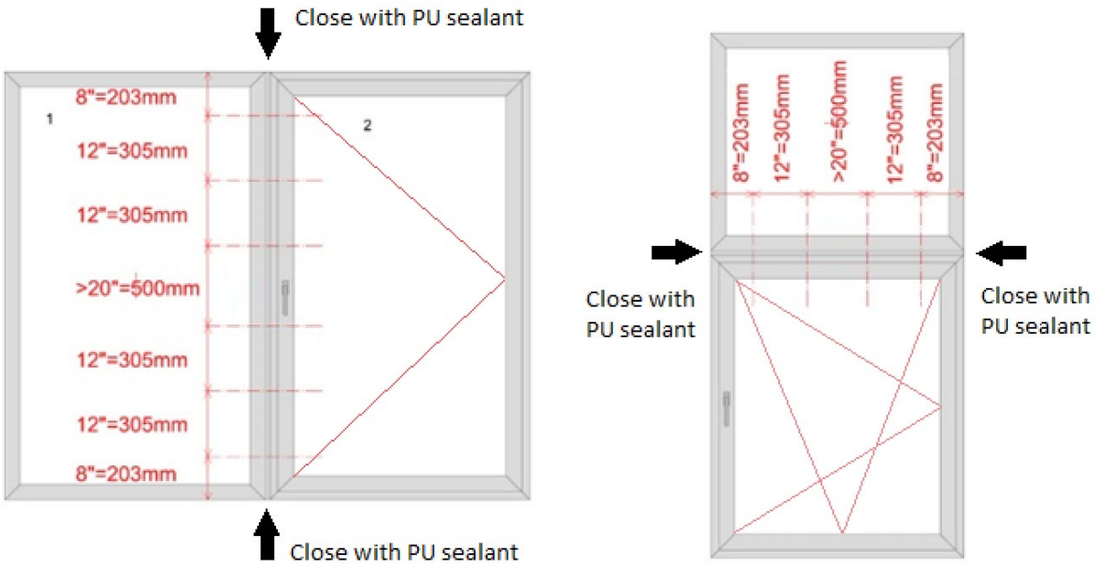
To couple two frames together you must start by deglazing the window or door and removing the sash. Then put two frames flat to couple them together. After coupling proceed with installation. Only when the coupled frames are correctly installed and fixed to the wall with straps you can install glazing and sashes. Make sure to always check the alignment of the coupled elements.

Important!

It is forbidden to lift and move coupled windows and doors with sashes or glazing, as you risk destroying them.

Important!

The coupling/mulled connection must be closed on both sides to avoid water or bugs to penetrating it. Some connections have included closing system with foam sealing plugs and cups, but others may need to be closed with sealant only – caulking system for every coupling system shown under each connection. Both vertical and horizontal couplings must be caulked on both sides – see picture below. Always make sure this is done correctly and there is no gap in the sealant.



Tolerances for connections

Connected windows or doors always must be checked to ensure perfect straightness:

- on the bottom and top part from left to right corner for vertical connection

- from top to bottom edge for horizontal connection

4.6.1 Vertical connection

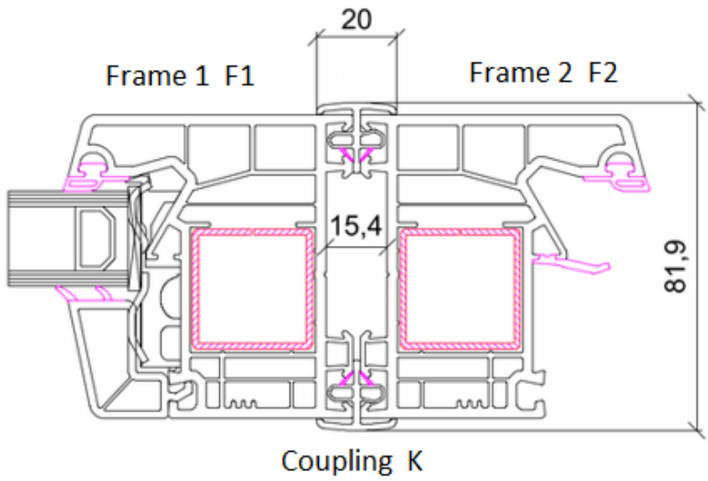
4.6.1.1 'T'-shape coupling

This coupling system consists of two long and thin PVC elements that should be placed from inside and outside of the window/door.

Make sure you received:

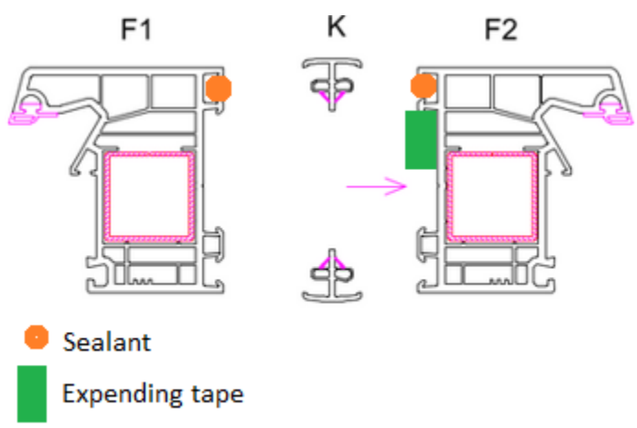
- 1 long PVC 'T-shape' profile for internal connection
- 1 long PVC 'T-shape' profile for external connection
- expending tape
- screws 1/3"x2"7/8 + caps (not obligatory)
- sealant
- 1 drill 1/4 " (6 mm)
- 1 drill 1/3" (8 mm)

You will have to connect three elements: F1 + K+ F2:



To connect:

- **F2** – apply expanding tape and the sealant in the indicated places:



- **F1** – apply sealant in the indicated place on the F1 frame

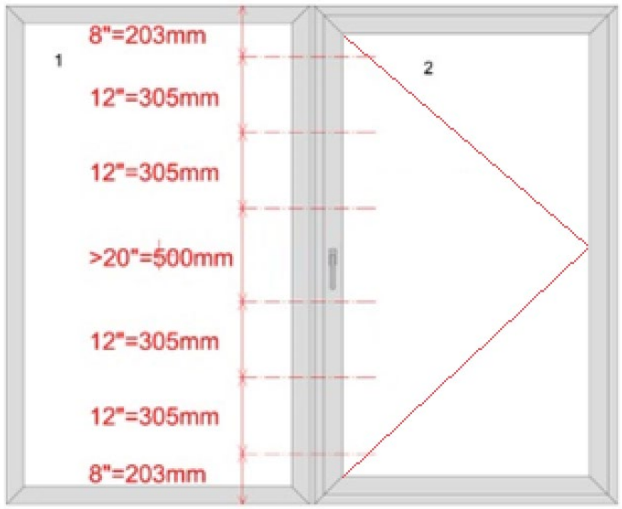
Important!

Sealant must be applied under the external coupling profile. Make sure both sealants are applied continuously and evenly.

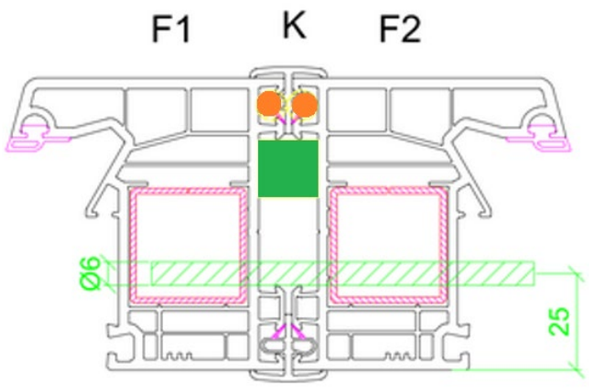
- **K+F2** – install both - internal and external coupling profiles and connect both frames together. For better connection you can use a carpentry clamp.

Next, you will have to drill holes in both frames. Read the next steps carefully and follow the scheme below to measure the right distance between the screws.

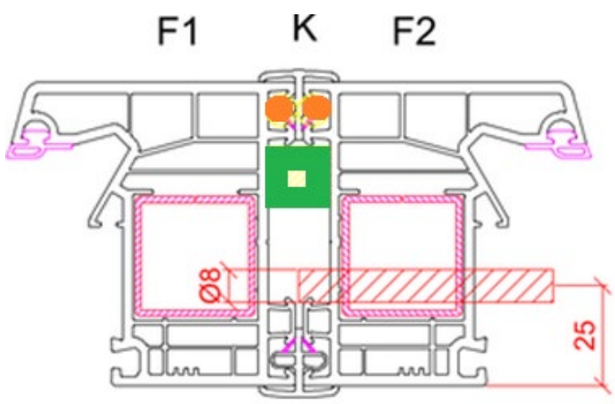
Tip: Always start by measuring distance from bottom and top corners and continue towards the middle of the frame:



- **F1+K+F2** – drill holes of 1/4" in the F2 frame and F1 frame. **Make sure you are going through one wall of the F1 frame only**:



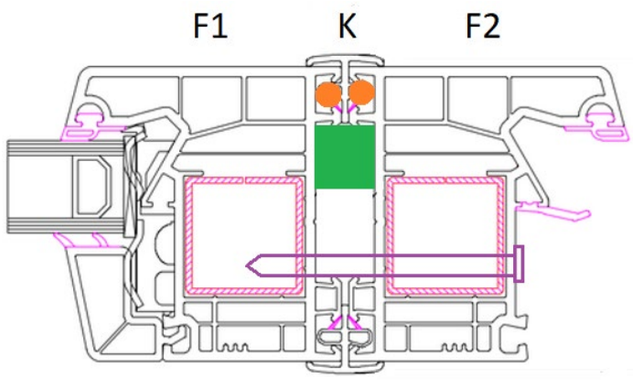
- **F2** – drill holes of 1/3" in the F2 frame:



Important!

Do not drill the holes of 1/3" in the F1 frame.

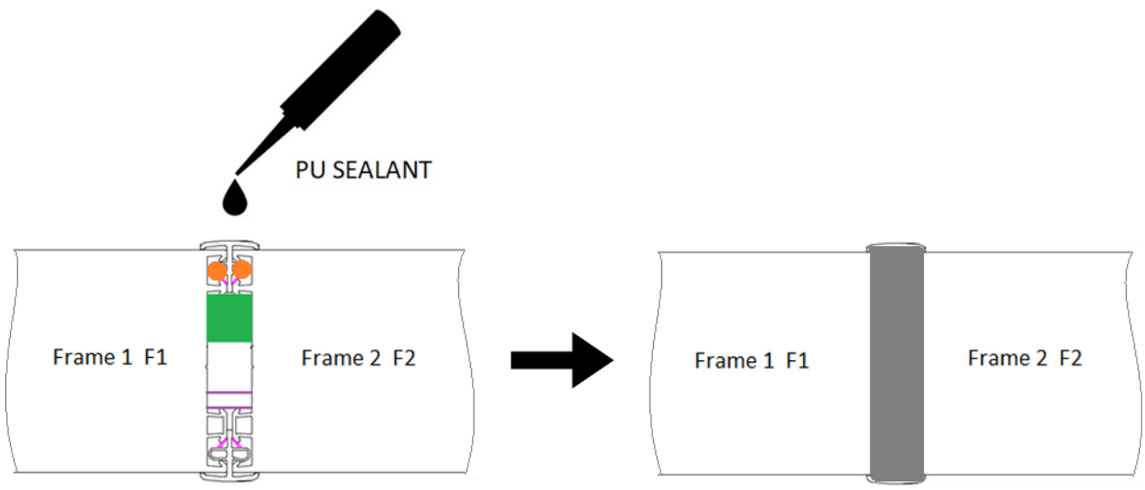
- F1+K+F2 – starting from F2 frame screw all the three elements together:



The holes of 1/3" allow to put in the screw and the holes of ¼" serve to firmly connect both frames.

Top and bottom caulking

Top and bottom edges of the coupling must be covered with sealant. Make sure there is no gap in the sealant as that might let the water get inside the product:



Tip: Clean the excess sealant on the frame when it is still wet using a window cleaning product and paper towels.

Leave the connected windows for 20-30 minutes for the sealant to dry and then proceed with installation according to the chosen installation type.

4.6.1.2. Flush coupling

These couplings have two possible dimensions depending on the thickness of the window they were designed for.

Before starting the installation, make sure you have received all the coupling elements needed:

- PVC coupling (type depending on the window system)
- Screws 1/3"x3"2/3 (7,5x92)
- expending tape
- sealant
- 1 drill 1/4 "(6 mm)

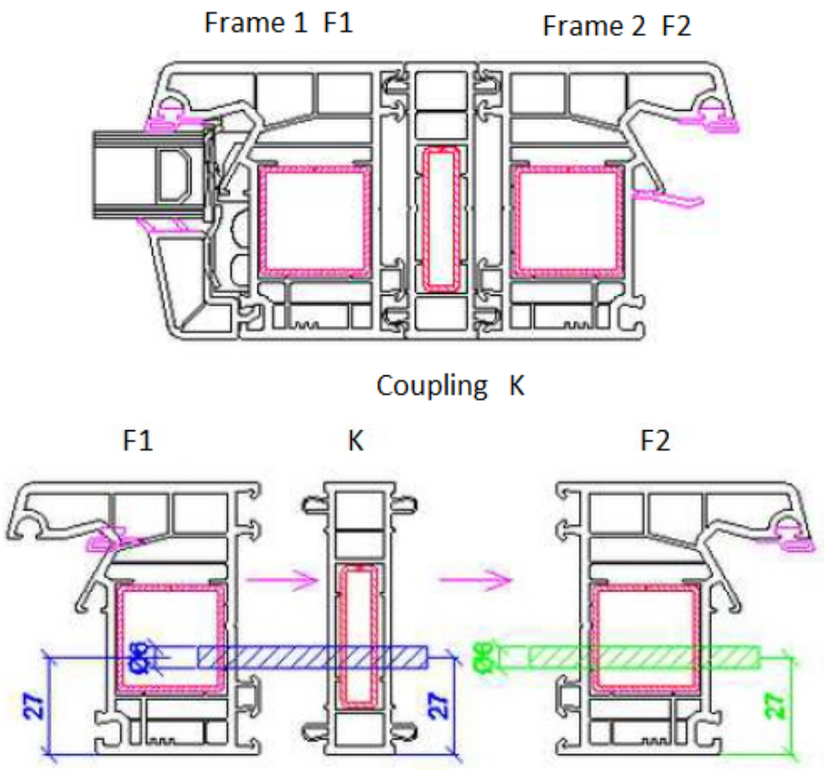
- 1 drill 1/3" (8 mm)

You will have to connect all the three elements together (F1+K+F2). You will find pre-drilled holes of 1/4" (6 mm) in the F2 element. Drawing below shows you the elements to connect in this coupling system:

F1 – frame 1

F2 – frame 2

K – coupling



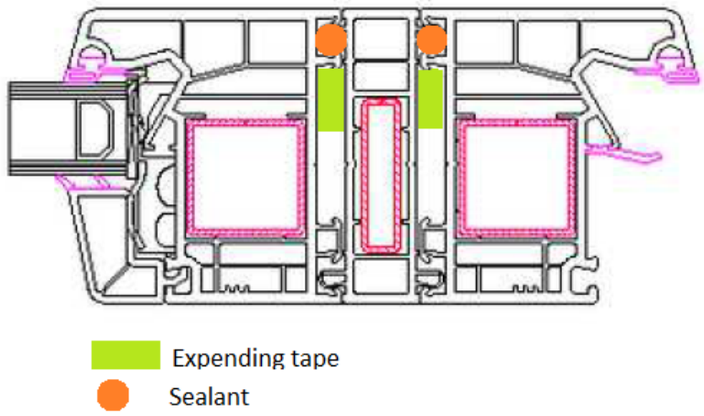
To connect:

- **F1 with K** – Drill holes of 1/4' (6 mm) going through holes in F2. Make sure all the three elements match perfectly and there is no difference in the position of the drilling between these 3 elements.
- **F2+K** – put both profiles together and drill the holes of 1/" (8 mm) going through the existing hole in frame 2.

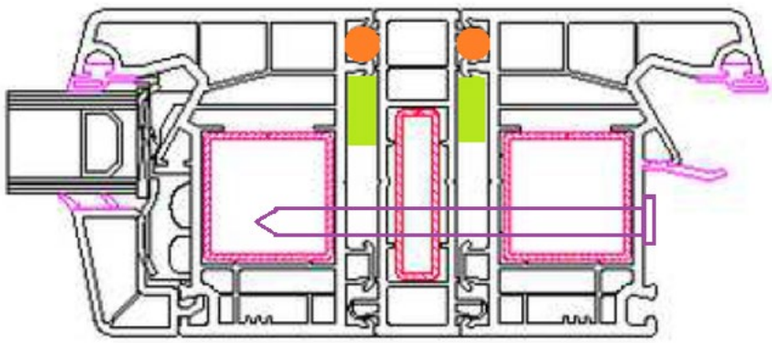
Important!

Do not drill the hole of 1/3" (8 mm) in F1.

- Apply expanding tape and sealant on the window frame before connecting all the three elements together. Places to apply the expanding tape and the sealant are shown in the drawing below:

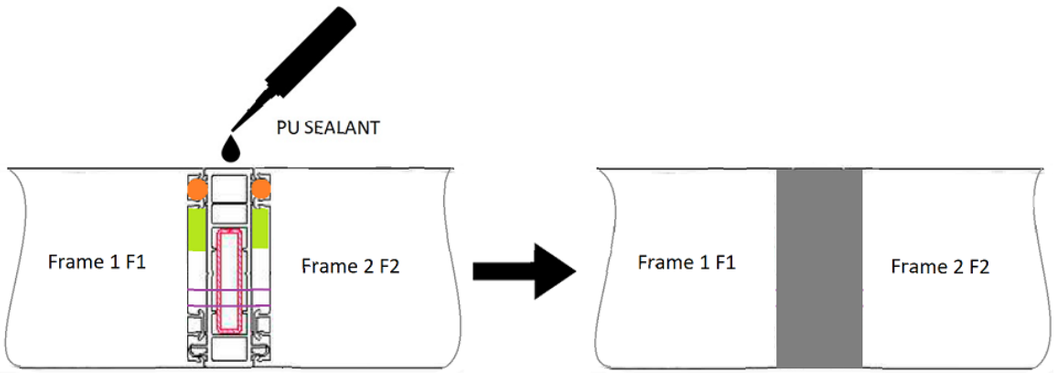


- **F1+K+F2** – screw all the three elements together going through the hole of 8 mm in F2:



Top and bottom caulking

Close the connection by applying sealant to both edges for better watertightness. Make sure there is no gap in the sealant as that might let the water get inside the product:



Tip: Clean the excess sealant on the frame when it is still wet using a window cleaning product and paper towels.

After waiting 20-30 minutes (depending on weather conditions) for the sealant to dry you can proceed with putting the construction in vertical position and installing it according to the installation type chosen for the project.

Important!

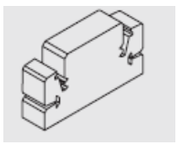
Make sure to adequately support the bottom part of the frame when moving the coupled product.

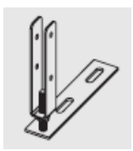
Before fixing the coupled product to the wall always make sure it is straight level and plumb. It is also crucial to check its straightness going from left to right corner in top and bottom part of the coupled product.

4.6.1.3. Dilatation coupling

This coupling system is more complex and requires more knowledge and precision from installers. It has several elements and some of them were already installed during manufacturing. You are only provided with the parts you need to connect two frames before installation.

First check if you have received all the elements needed for correct installation:





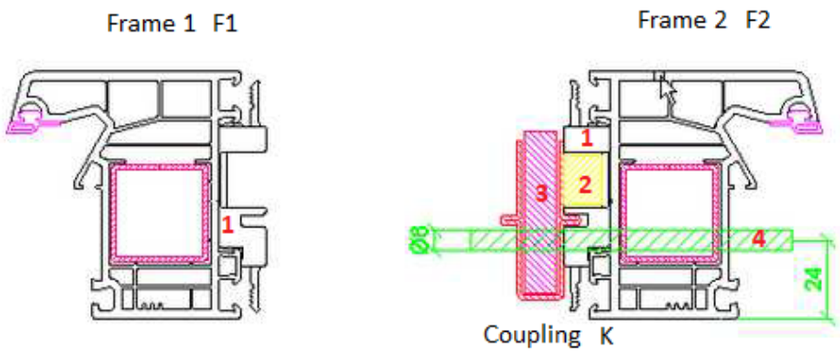
- 4 foam sealing plugs per coupling (first figure on the right)
- 4 plastic end caps per coupling (second figure on the right)
- 2 anchoring shoes per coupling (third figure on the right)
- 2 long PVC profiles that match the color of the window/door
- screws for installation 1/3'x4' (7,5x102)
- expanding tape
- PU sealant
- 1 drill 1/4 " (6 mm)
- 1 drill 1/3" (8 mm)

Make sure you follow the drawings and symbols shown below during all the installation process:

F1 – frame 1

F2 – frame 2

K – coupling



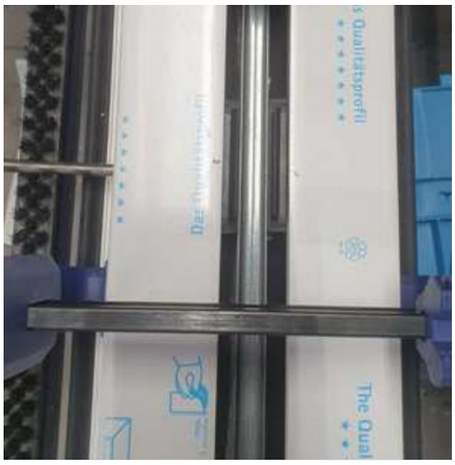
These elements were installed or prepared during manufacturing: spacers for couplings **1**, expanding tape **2**, reinforcement **3**, pre-drilling of the holes **4**.

The points below describe the process:

- **F1** – Apply expanding tape on Frame 1 so that it matches the expanding tape on Frame 2. Make sure the tape is applied all along the window frame. See pictures below for visual representation.
- **F1 with F2+K** – Put the two frames together and drill a hole of 1/4" mm in F1 through F2+K. You can use carpentry clamp to immobilize both frames. Do not press the two frames against each other too strongly to avoid damages.
- **F2+K** – drill holes of 1/3".

Important

Do not drill the hole of 1/3" in F1.

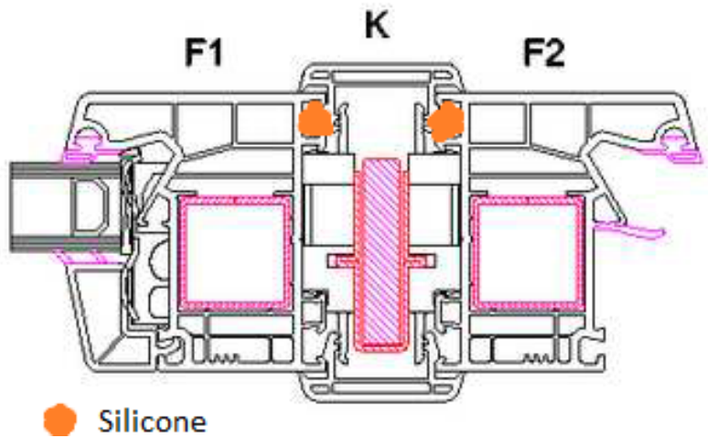




- **F1+K+F2** – connect the two products using the screws AMO 7,5x102 starting from the Frame 2.
- **F1+K+F2** – apply the sealant on both frames all along the coupling system and then put a long PVC cover on it. Make sure the color of the plastic caps matches the color of the window frame if the external and internal side of the window have different colors.

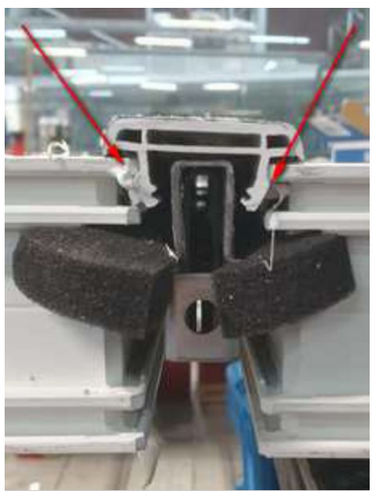
Important

The sealant must be applied continuously and evenly to avoid any water leakage through the coupling system in the future. Make sure that the thickness of the applied sealant is sufficient, we recommend a ¼" thickness.





- **K** – Apply the foam sealing plugs on the top and bottom edges of the coupling. Use sealant to seal the edges of the plastic cap and close them with end caps.



Repeat the actions described above on the internal side of the product. Put the sealant along the window profile and cover the reinforcement with long PVC profile. Put the foam sealing plugs on the top and bottom edge of the coupling and seal the coupling edges with sealant. Then apply plastic caps. For better sealing apply the sealant on the top and bottom edges of the coupling system too.



Install the anchor shoe on the coupling profile and match it to the height of the rough opening. It can be adjusted simply by turning it.



If the products are to be installed with straps, install them according to the instructions provided in section 1.1.

After waiting for 20-30 minutes (depending on weather conditions) for the sealant to dry you can proceed with putting the construction in vertical position and installing it according to the installation type chosen for the project.

Important!

Make sure to adequately support the bottom part of the frame when moving the coupled product.

When the product is ready, put it in the rough opening. Always make sure it is straight, level and plumb. Use shims in correct places – according to point 3. Turn the anchor shoe perpendicularly to the window frame and check its adjustment to avoid any window deformations. Check if there are no bows or angles on the top and bottom edge of the product with a straight edge. Screw the anchor shoe and all the straps to the wall.

Tip: Place the anchor shoe along the window frame to avoid breaks, damages or injury.

Before fixing the coupled product to the wall always make sure it is straight level and plumb. It is also crucial to check its straightness going from left to right corner in top and bottom part of the coupled product. Only then you can fix the product to the wall according to the installation type provided for this project.

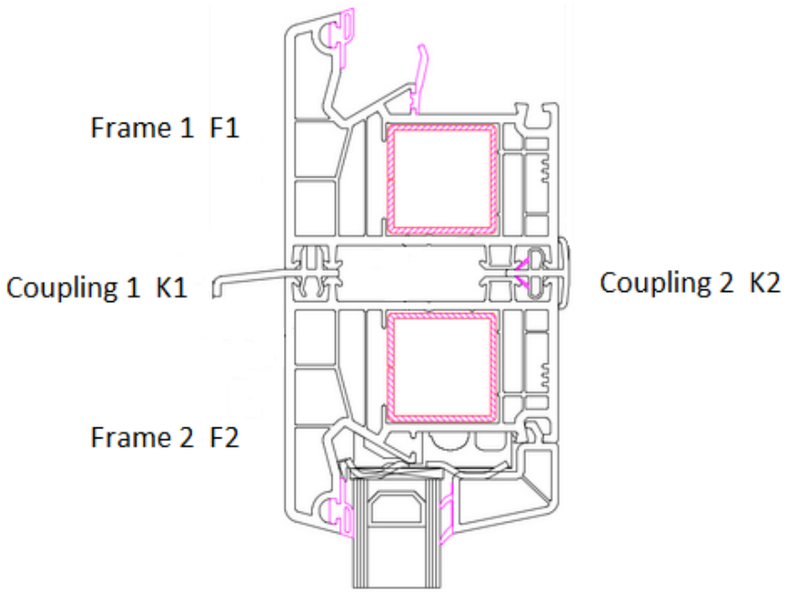
4.6.2. Horizontal connection:

4.6.2.1 Horizontal coupling

This coupling system consists of two long and thin PVC profiles that should be placed from inside and outside of the window and door. The profile to place from inside of the window has mushroom shape and the profile from outside is a drip caps.

Before installation, make sure you received:

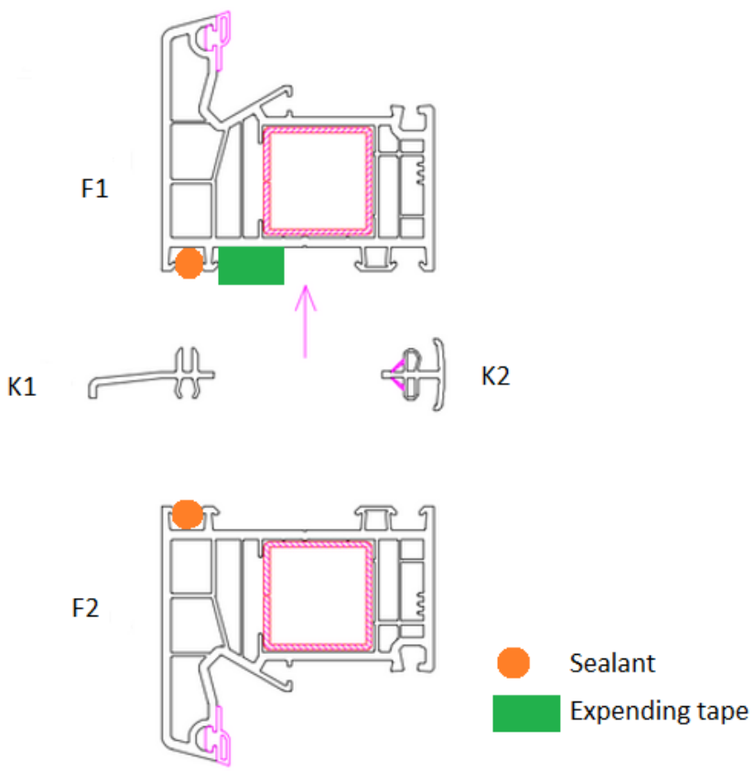
- 1 'T-shape' profile
- 1 drip cap profile
- expending tape
- long screws 1/3"x2"7/8 caps (not obligatory)
- sealant
- 1 drill 1/4 "(6 mm)
- 1 drill 1/3" (8 mm)



You will have to connect three elements: F1 + K1 + K2 + F2:

To connect:

- **F1** – apply expanding tape and the sealant in the indicated places.
- **F2** – apply sealant in the indicated place on the F2 frame:



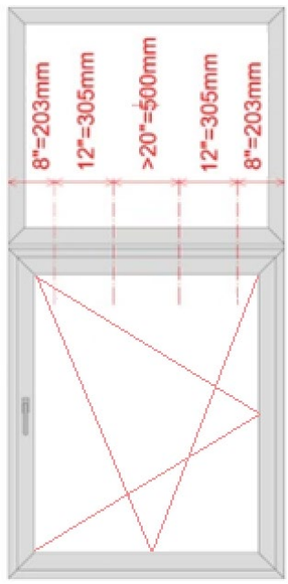
Important!

Sealant has to be applied under the external coupling profile. Make sure both sealants are applied continuously and evenly.

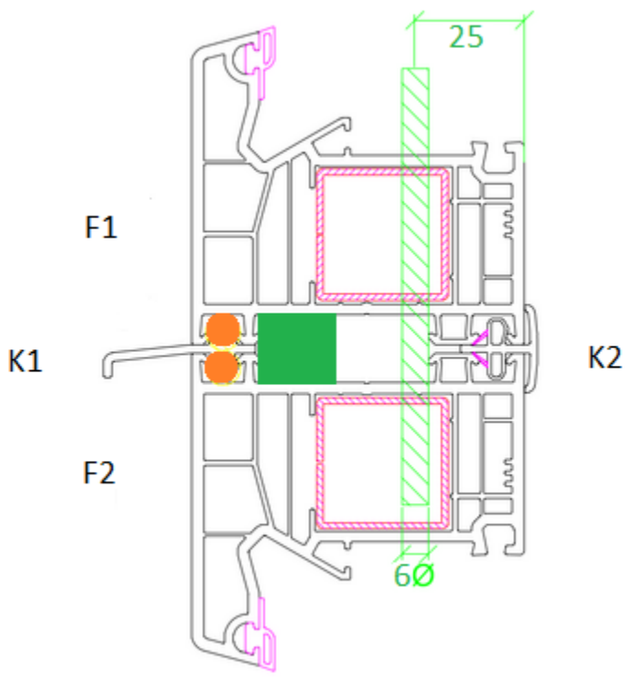
- **K1+K2+F1**– install both - internal and external coupling profiles and connect both frames together. For better connection you can use a carpentry clamp.

Next, you will have to drill holes in both frames. Read the next steps carefully and follow the scheme below to measure the right distance between the screws.

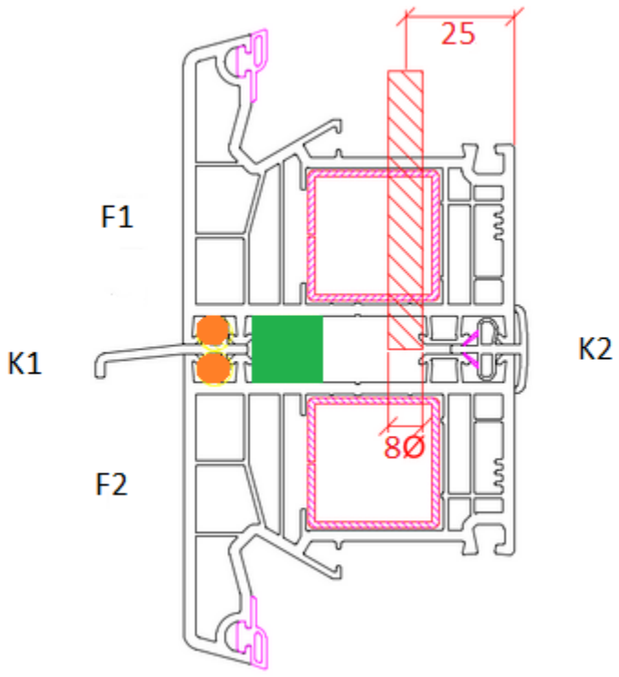
Tip: Always start by measuring distance from bottom and top corners and continue towards the middle of the frame:



- **F1+K+F2** – drill holes of 1/4" in the F2 frame and F1 frame. **Make sure you are going through one wall of the F2 frame only**:



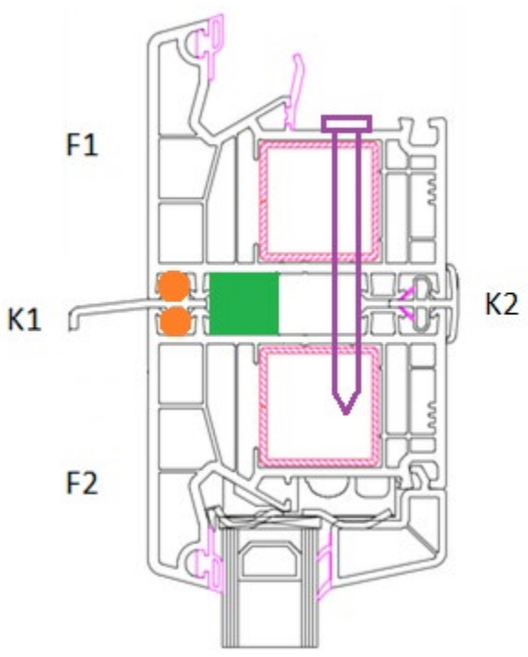
- **F1** – drill holes of 1/3″ in the F1 frame:



Important!

Do not drill the holes of 1/3″ in the F2 frame.

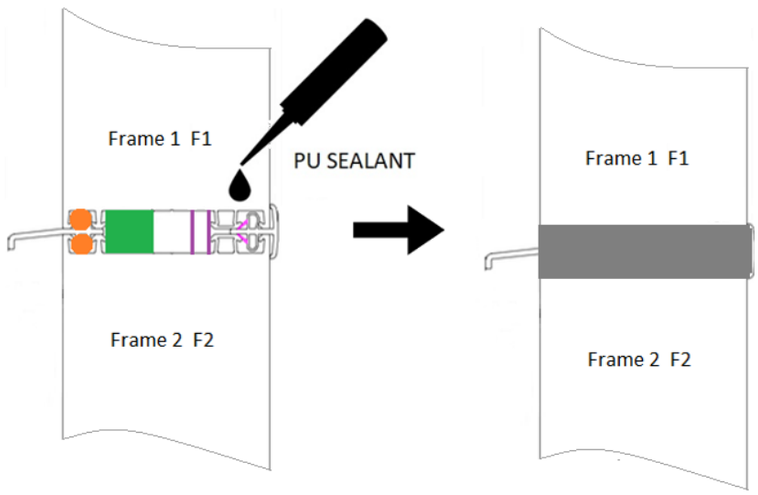
- F1+K1+K2+F2 – starting from F1 screw all the three elements together:



Holes of 1/3″ allow to put in the screw and holes of ¼″ serve to firmly connect both frames.

Left and right side caulking

Close the connection by applying sealant to both edges for better watertightness. Make sure there is no gap in the sealant as that might let the water get inside the product:



Tip: Clean the excess sealant on the frame when it is still wet using a window cleaning product and paper towels.

Leave the connected windows for 20-30 minutes for the sealant to dry and then proceed with installation according to the chosen installation type.

4.6.2.2 Other couplings

If the coupling system specified in your order has not been covered in this manual, contact Amberline LLC for detailed instructions.

In case of questions related to the installation of the received products contact Amberline LLC.

4.7. Amberline windows and doors and other products

Installing a product according to this manual guarantees its proper functioning and longevity. Installation and finishing works must be done in a way that will not impact the proper functioning of Amberline products.

It is strictly forbidden to cover the draining holes with any finishing materials or windowsills. Inside and outside wall development cannot cover the window frame by more than it has been specified in this manual to avoid blocking the window/door hinges' proper operations. It is strictly forbidden to block the window/door sashes with any finishing materials that impact their proper functioning and that could damage the product in case of closing it abruptly. It is strictly forbidden to use windows/doors and their elements to support or protect the installation team. Windows should be treated with care after the installation and therefore it is forbidden to put support ropes, cables etc. on the frame.

Amberline uses a PU sealant that should not interact with other sealants, tapes and sealing foils commonly used by installation teams.

5 After Installation

5.1 Removing tapes from the profiles

Our products usually come with protective tape on the outside and inside surfaces that ensures the surfaces are protected from scratching during manufacturing, shipping and handling. We recommend removing the exterior and interior **profile protective tapes immediately** after installing them as high temperatures and sun exposure can bind the tape to the profile and cause permanent damage to the product surface. On the other hand, **glass protective tapes** can be removed **within 12 months**. Removing glass protective tapes has to be done carefully and slowly to avoid creating sparks of electricity.

5.2 Removing sash spacer shims

After installation immediately remove the sash spacer shims from the inside of the frame.

Fig. 7. Sash spacer shims:

5.3 Cleaning Amberline products

Make sure to clean Amberline products and protect them from any building materials after installation. Failing to protect the windows from building materials and not cleaning them properly at the construction site may void the warranty.

Cleaning Aberline products has to be done with caution as the use of unsuitable cleaning products or devices can permanently damage the profiles, glass, and other components of our products. For the first cleaning, we recommend using clean water with mild soap with a neutral pH. **Any impurities from building materials (mortar, dust, gypsum, cement, etc.) can destroy the product. They have to be removed immediately with water and soft cloth to avoid buildup and surface damage.** Once debris is removed, specially designed window cleaning products may be used. **Detailed cleaning instructions for each component of the window are available in section 6.1.**

If you want to minimize the risk of building materials damaging Amberline products you can cover them with UV-resistant transparent foil while other construction works are in place.

Important!

Never scratch solid debris from the surface of the window. Always use clean, soft cloth, non-abrasive cleaning accessories such as gentle sponges, or cotton/microfiber cloth.

Any abrasive cleaners, chemical solvents, acid or alkaline solutions, petroleum-derived compounds, or concentrated alcohol (for profiles) can permanently damage the product surface.

Never use metal scrapers, metal or harsh sponges, etc.

5.4 Basic adjustments

To best understand how to perform basic adjustments and fitting maintenance get familiar with video guides produced directly by our fitting supplier Winkhaus. The links are provided below:

Winkhaus active pilot:

http//www.youtube.com/watch?v=UqirOXj24UY&list=PL9v2qTVq71CaGDAsNKwmtZF_8pmaTeTJM&index=2

Winkhaus activ pilot select concealed hinges:

https://www.youtube.com/watch?v=OLuPetRLpyQ&list=PL9v2qTVq71CaGDAsNKwmtZF_8pmaTeTJM&index=3

Maintenance of Winkhaus fittings:

https://www.youtube.com/watch?v=RmFr9Rpo1r4&list=PL9v2qTVq71CaGDAsNKwmtZF_8pmaTeTJM&index=1

Patio Door Hinges SIKU RB:

5.5 Potential problems and solutions

After installation, check if all the windows work correctly. The majority of the problems are caused by improper installation, building settlement in time, etc. This section describes the most common problems and solutions.

5.5.1. Difficult opening or closing the windows

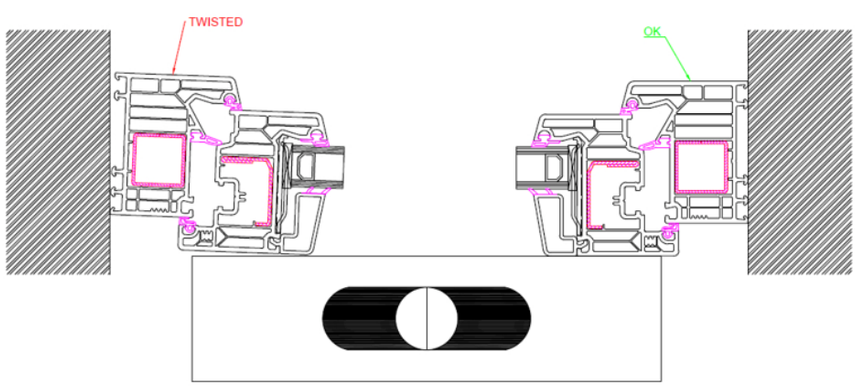
Do not make any hardware adjustments before determining the cause of the operating problems. Open and close the sash several times. If it doesn't work properly, most likely the window was not installed in a level, plumb, and square way, or the frame and sash are not straight. To check if the window was installed properly, check all the points below:

Important!

Do not apply any sealant before sash operating problems are corrected.

5.5.1.1 Twisted and bowed frame

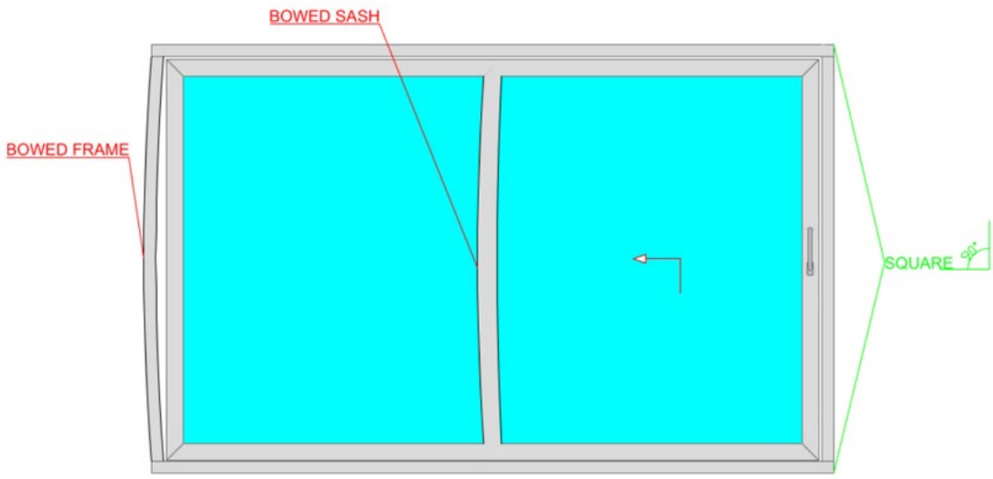
Fig. 8. Twisted frame:



Check the edge of the frame with a long straight level. If the frame is twisted towards the side, you must loosen the anchor screws, correct the frame position by placing shims between the window frame and rough opening and re-tighten the anchor screws. If the frame is twisted toward the center of the

window try to twist it into position or, if it is not possible, replace and re-bend the anchors as it may cause the deformation of the frame.

Fig. 9. Bowed frame and sash

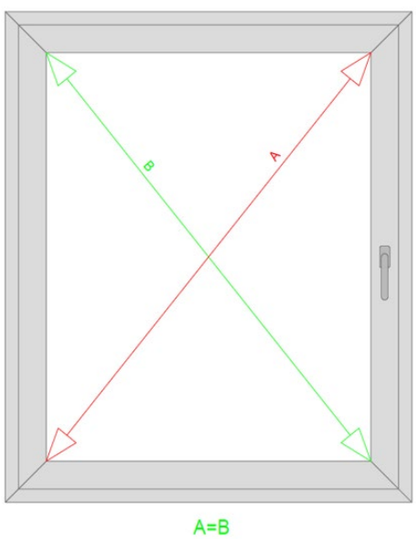


Inspect the straightness of the frame to locate the bowing. Unscrew the anchors in the problematic area, straighten the frame with a wooden block and a hammer, and refasten the anchors. To straighten the frame, place the block on the top of the bow and try to tap it back to the right place.

Important!
Be gentle when tapping the frame to avoid brakes or damage to the frame or glass.

5.5.1.2 Out of square sash

Fig. 10. Measuring diagonals:



To determine if the sash is square, check if the diagonals are of the same length. If they are not, check if the frame is square, plumb, and level with laser. The frame may need to be corrected according to points 5.5.1.1 and 5.5.1.2.

5.5.1.3 Bowing sash (see Fig. 9)

Use a level to locate the bowing. If the sash bows toward the glass, the glazing shims may have slipped. In that case you must remove glazing beads and place shims correctly according to the video (QR code in point 4). If the sash bows toward the frame, first remove glazing beads and check shimming – the shims might have moved from their original position, if so fix their placement. If the shims are okay, the sash may be stretched. In this case, use the composite hammer and wooden block and tap gently on the top of the bowing till the sash is straight.

5.5.1.4 Sash overlap

To check the placement of the sash against the frame close the window, take a pen or pencil, and draw a line on the frame all around the sash. Then open the window and measure the distance of that line from the inner frame edge of the frame, the distance should be between 6.5 to 8mm (1/4"–5/16"). If the distance is larger, you will have to adjust the hinges – see point 5.9 hinge adjustment.

5.5.1.5 Locking points don't engage

You can check it by closing the window and operating the handle. If the handle works too easily, the locking points probably don't meet the keeps. To be sure apply putty to the keeps where the locking points should engage and close the sash with the handle. Open it and check for the traces in the putty. If they don't engage correctly, contact Amberline LLC.

Important!

Don't adjust fitting elements on your own but contact an Amberline LLC representative.

5.5.1.6 Incorrect handle operation

This issue may appear for different reasons:

a. Locking points don't engage properly

If they don't meet keeps correctly, the fittings may be blocked, and the handle can't turn to the final closing position. Never push the handle too strong as it may break. Apply putty on keeps (see point F), to check if it is the issue. Contact an Amberline LLC representative before making any hardware adjustments.

b. DFE element may need to be adjusted

You have received windows with DFE element that prevents windows from malfunctioning when you change the handle position from turn to tilt. Always make sure the window leans equally on the frame before changing the handle position. In some cases, the DFE element may need adjustment (in case it doesn't open properly contact Amberline LLC for assistance)

c. Handle stops at the turn position

Your windows may have a tilt lock element that limits the operation to turning. Check the shop drawings to determine if the tilt lock element is present in a particular window.

d. Horizontal handle position tilts the window, and you can't rotate the handle upwards

The window you are installing may have the "tilt first" hardware (this means that the handle works in reverse order, the horizontal handle position – window tilts, handle rotated upwards – window turns). This type of hardware always has a TBT handle with a key. Turning the handle horizontally is blocked by that key. Turn the key to go from tilting to turning the window.

5.5.1.7 Dirt and debris

Carefully clean the window frames and hardware using warm water and soft cloth. Then spray a non-silicone, solvent-free lubricant into the holes on the hardware (don't forget the hinges) while opening and closing the window to let it fully spread.

5.5.1.8 Damaged hardware

If you discover any damages to the hardware contact Amberline LLC for replacement parts.

5.5.1.9 Too tight locking points

The fittings around the window sash have several locking points that have 3 settings: "neutral", "winter", and "summer" positions. These locking points may get too tight if they are left in the "winter" position in warmer periods due to the thermal expansion of the uPVC profiles. Change the locking points positions as the seasons change.

5.5.1.10 Building settlement

Every new building settles with time. This is a natural process that may have an impact on the functioning of the window as it changes its position when the building settles. If you suspect this has happened to your windows, contact Amberline LLC and the General Contractor.

Important!

Amberline is not liable for defects in products resulting from the settlement of the building.

5.5.1.11 Window size and weight

Heavy sashes may need more physical strength for operation. This is not considered as malfunctioning. To make operating easier keep them clean and lubricate regularly.

5.5.2. The handle side of the sash and frame are not parallel when put close to each other

This is mostly caused by improper window positioning. Check if the window is level, plumb and square.

5.5.3. The sash is binding in more than one place

Check the sash overlap. See point 5.5.1.4, Sash Overlap.

5.5.4. Air is passing between closed sash and frame

Lack of tightness in the window may result from different reasons. See the points below to diagnose the source of the problem:

- Worn-out or damaged gasket

Check if the gasket around the sash and frame is not twisted or damaged. If it is, the gasket must be replaced to maintain window performance.

- The window frame was stretched during installation.

Check the window width at the top, middle, and bottom and the window height on the right and left sides and in the middle of the window. If the window width or height differs between measurements, the window may have been fixed too strongly during installation and it will have to be corrected. Unscrew straps, and correct the frame, you may use shims and re-tighten the straps.

- Sash overlap

Check the sash overlap all around the window. See point 5.5.1.4, Sash Overlap.

- Locking points need regulation.

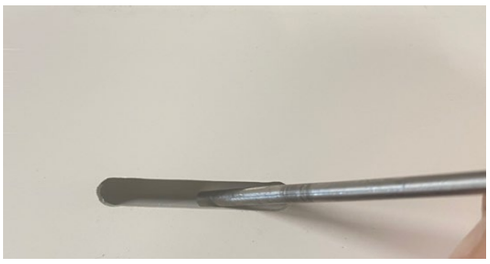
This is especially important as the seasons change. See point 5.5.1.9, Too tight locking points.

5.5.5. Water leaks between glazing beads

Water leaks may result from a blocked drainage system or from strong wind pushing the water inside the frame when weep caps are not installed. Make sure to:

- Check if all the drainage holes on the bottom part of the frame have correctly installed weep caps (always turned towards the ground)

- Check if the drainage system is not blocked by pouring water into holes inside the bottom window frame. Water should flow out through drainage holes outside the window frame. If it doesn't, the drainage holes may have been blocked with building materials or dirt. Use compressed air to remove any dirt from the drainage system. The air should go from inside the frame toward drainage holes on the outer side of the frame. After this operation check if the water can drain out freely through drainage holes.



Important!
Weep caps are very important for window tightness and must be installed correctly.

5.5.6. Condensation

Steam on the glazing may appear for two reasons:

A. On the inside

When there is not enough ventilation in the building, the humidity can cause fog/steam on the inside surface of the glass.

B. On the outside

Haze and even ice can appear on the triple-glazed glass in the colder periods. This process is reversible, the haze and the ice will disappear as it gets warmer outside. It is a normal physical process and cannot be reported as a claim.

5.5.7. Glass standards

Glass is the most vulnerable part of the window and must be treated with special care during the installation process. In case you notice breaks, scratches on the surface, chipping, etc., it will most likely need to be replaced. Contact Amberline LLC representative to discuss the details.

For any other problem or if the problem continues despite following the solutions suggested above, contact the manufacturer.

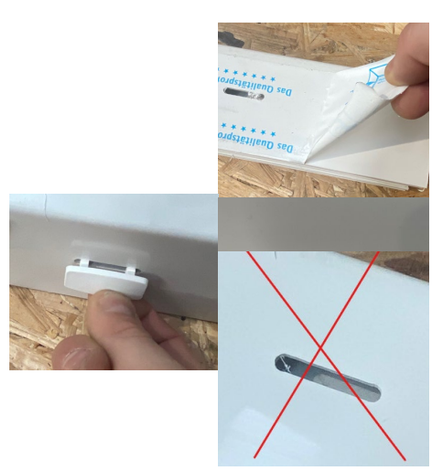
5.6 Installing screens

Refer to the appendix (section 9.2) for detailed instructions for installing screens.

5.7 Installing weep caps

Install the water drainage weep cups is essential for the proper functioning of the window. Make sure to install them **before** you finish the installation. Follow the steps described below to install them properly.

- Remove the protective film from the outside surface of the profile directly after the installation.
- Place the water drain cover in the hole located on the outside bottom side of the profile.



Important!

Do not leave water drain holes on the bottom frame not covered with water drain caps!

5.8 Temporarily detaching restrictors

FSR Restrictor:

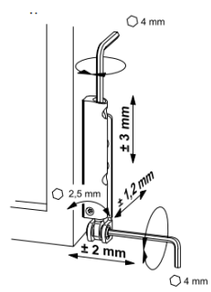
WOCD Restrictor:

SDR 4/SDR 6 for NY:

5.9 Adjusting gasket pressure by adjusting locking points

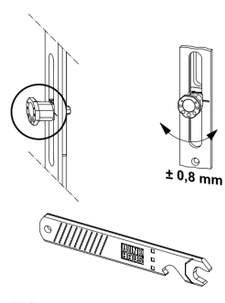
- Corner hinge/sash hinge

Sash hinge height can be adjusted by ±3mm (±1/8") and corner hinge adjustment by ±2mm (±5/64") using a 4mm (5/32") Allen Key. For sash hinge adjustment of the contact pressure between sash and frame (±1.2mm; ±3/64") use a 2.5mm (3/32") Allen key.



- Octagonal bolt

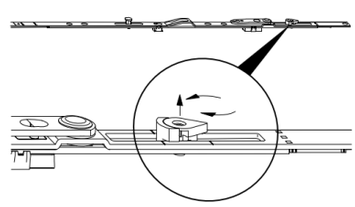
Regulate the contact pressure between the sash and the frame (±0.8mm; ±1/32") by turning the octagonal bolt. The adjustment can be carried out using the Winkhaus adjustment key (V.SCH.ACP-S).



Octagonal bolt

- Shear retraction

The progressive shear pull-in is adjustable from 18 (45/64") to 28 mm (71/64"). Release the catch by pulling up to the adjustment latch then pivot the adjustment latch away from the overlap. A variable tilt device, MSL.OS can be used as an alternative to the progressive sear pull-in.


Shear retraction

Source: Winkhaus

6 General Rules and Safety

These general safety rules apply to all our products, please get familiar with them to avoid any accidents.

6.1 Safety while Cleaning

- Make sure you are uninterrupted while opening, closing, and cleaning the products.
- It is best to choose a calm and dry day.
- Refrain from climbing on steps or furniture while cleaning the windows to avoid falling. If you cannot reach the top of the window, use a long squeegee to reach the top parts.
- Do not lean out of a window to avoid falling.

6.2 Safety while Operating

- Make sure to firmly hold the handle when opening the windows and doors in case of unpredicted strong winds.
- Close the windows and doors on windy and rainy days to avoid damage by airborne debris.
- When opening and closing the windows and doors make sure only to use the designated handle and keep your hands away from other sides of the product to avoid trapping or slamming them.
- With outward opening windows on the ground level, it is best not to open them fully to avoid people walking into them.
- Do not leave the windows fully open when unsupervised to avoid potential break-ins and kids falling out. If you want to ventilate the room, leave the windows tilted in the day-to-day ventilating position.
- In the reversible outward opening windows, the ironmongery has a “scissor” type action. Do not put your fingers in it to avoid injury!

7 Cleaning and Maintenance

7.1 Cleaning

To preserve Amberline products’ quality they should be cleaned and maintained regularly. This ensures better durability, performance, and appearance. Refer to the detailed cleaning instructions provided below. Not following these instructions may void the warranty.

7.1.1 IGU Glass Cleaning

In normal conditions the glass should be cleaned at least every three months. In case of heavy pollution area or ongoing construction works, you should increase the frequency of glass cleaning according to the needs. Any dirt visible on a cloudy day should be cleaned immediately. Make sure to pay extra attention to the glass during ongoing construction works as the materials used (salt, debris etc.) have the potential to damage the product, always clean them off the product immediately according to the instructions below.

- The IGU glass should be cleaned regularly using specially designated glass cleaning products.
- Oil stains should be removed using acetone (make sure to adhere to the instructions provided by the acetone producer)
- The reflective glass should be cleaned using a cerium oxide suspension (50÷160 g/l of water)
- For glass with a self-cleaning coating please contact our Amberline representative in the US to receive detailed cleaning instructions
- In case of solid contaminants on the glass surface, make sure to soak them generously in clean water before removing them gently to avoid surface damage.
- Grease and residues of sealing compounds can be removed with alcohol or isopropanol and thoroughly rinsed with water.
- Refrain from using any abrasive or alkaline substances (fluorine, chlorine) as well as cleaning powders on reflective coatings as they may damage the coating.
- Do not use any abrasive cleaning accessories such as harsh sponges, metal scrapers, metal sponges, etc.

7.1.2 PVC Profile Cleaning

In normal conditions the profiles should be cleaned at least every three months. In case of heavy pollution area or ongoing construction works, you should increase the frequency of profile cleaning according to the needs. Make sure to pay extra attention to the profiles during ongoing construction works as the materials used (salt, debris etc.) have the potential to damage the product, always clean them off the product immediately according to the instructions below.

- Clean white PVC profiles with gentle detergent with neutral pH (dishwashing liquid or soap dissolved in clean lukewarm water) and soft cloth.
- Clean colored PVC profiles using household cleaners with neutral pH diluted in clean lukewarm water.
- Avoid using corrosive liquids, chemical solvents, acetone, abrasives, powders, creams, or any alkaline or acidic cleaning agents as these can permanently damage the profile surface.
- Avoid harsh cleaning accessories (harsh sponges, metal scrapers, metal sponges, etc.), and scrubbing the profiles, as well as steam cleaners.
- Make sure you always use clean water! If during cleaning you notice the water getting dirty, make sure to change it immediately! Dirt particles can damage or scratch the window.

7.1.3 Hardware Cleaning

In normal conditions the hardware should be cleaned at least every three months. In case of heavy pollution area or ongoing construction works, you should increase the frequency of hardware cleaning according to the needs. Make sure to pay extra attention to the profiles during ongoing construction works as the materials used (water, salt, debris etc.) have the potential to damage the product, always clean them off the product immediately according to the instructions below.

- Clean hardware (stainless-steel, powder-coated, and plated finish) using gentle soap dissolved in clean warm water or a mild detergent and a soft cloth. Then rinse them with clean water and dry them to avoid water marks.
- Make sure you always use clean water! If during cleaning you notice the water getting dirty, make sure to change it immediately! Dirt particles can damage or scratch the window.
- Tea staining (brown discoloration) is not a defect, it will occur naturally in coastal and industrial environments. Regular cleaning will reduce this issue. Tea staining can be removed with Ajax, warm water, and baking powder, and a toothbrush.

Amberline is not liable for defects resulting from improper cleaning, the use of improper cleaning agents, the influence of external pollutants (atmospheric and other), and the use of tools/items that may damage the glass, such as a metal scraper.

7.2 Maintenance

As mentioned before, you should perform maintenance of our products to ensure good durability and performance in the long term. This should be done 1 to 2 times per year. Failure to perform maintenance on our products may void the warranty.

7.2.1 Hardware Maintenance

Hardware elements of Amberline products must be cleaned and lubricated at least once a year to operate properly. Use a spray silicon or a few drops of oil (free of resin and acid) to lubricate the hardware. The fittings must be adjusted with the same frequency. Check, and if needed tighten, the screws in the fitting so that the position of the fitting is correct.

Detailed instructions on how to perform these actions are provided in the appendix (see 9.4).

7.2.2 PVC Products Maintenance

Apart from hardware maintenance listed in point 7.2.1 PVC products require additional maintenance actions:

- Check the weep holes at least every 6 months and clean them with a vacuum cleaner if necessary.

- Check the gasket condition and lubricate it with silicone spray at least once a year. If the gasket is visibly damaged, you will need to replace it.
- Check the condition of the seals, if they are visibly damaged you will need to replace them.
- For sliding products make sure to clean the guide tracks and the lower frame with a vacuum cleaner at least once a month.

7.2.3 Additionally!

For construction elements such as facades, windows, doors, and roof glazing elements, ensure that the draining holes are unclogged, the glass seals and rubber seals are tight in the corners, the opening parts are supported correctly, and the covering profiles are fastened.

8 Field tests

For Amberline to honor the field test results, performed both at the job site and in the lab setting, they have to be performed by a qualified and certified party. The tests must be carried out according to the existing norms and standards **(AAMA 502 – 21).** Amberline LLC representative must be present during these tests and therefore Amberline LLC has to be given a prior notice of the field and lab tests.

Our windows are produced according to very strict norms to comply with the water-tightness level requested by the customer. No modifications to the window fittings can be done unless advised by the window producer.

Before starting tests, always ensure:

- the window is installed according to this manual

- the window is properly closed

-the gasket presses uniformly against the frame

- the sash evenly overlaps the frame

- the drainage system is clean

- the weep caps are placed correctly in the drainage holes

- the gaskets have been inspected and are damage-free and clean

IMPORTANT!

Installation and sealing materials are the General Contractor's/Installer's responsibility. The window manufacturer is not responsible for any leakage due to the sealing system or poor connection of the window to the wall.

9 Appendix

9.1 Optional sash and glass removal for installation

Sash and glass removal (fixed windows) before installation makes the window lighter and easier to handle. It is also safer and more time-efficient for the installers.

Required tools: protective gloves, glazing spatula, hammer for window molding, putty knife for removing window molding, Winkhaus service handle (provided with the product)

Important! Two people are needed to safely remove the sash and/or glass!

9.1.1 Sash Removal

To remove the sash, you will need the Winkhaus service handle. If the window has a restrictor, remove it first by unscrewing it or by detaching it using a special key (the key is provided with the restrictor).

- Remove the hinge cover from the top hinge and install the Winkhaus service handle to open the window.

- Open the window sash by moving the key by 90 degrees.

- Pull down the pin from the top frame hinge located on the other side of the window to remove it.

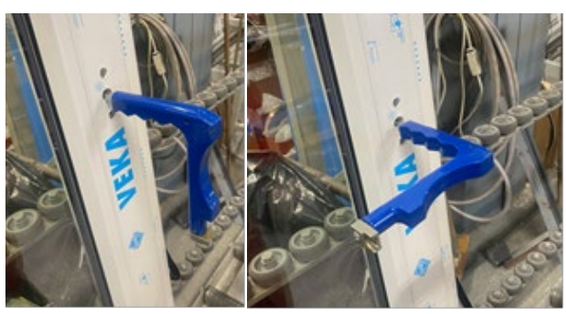
- Open the sash and remove the bottom hinge (two people are required for this).

9.1.2 Installing the Sash

- Put the sash on the bottom hinge first.

- Then place it in the top hinge and lock it by pushing
the pin upwards.

- Using the Winkhaus service handle close the sash by moving the service handle by 90 degrees down.



- Reattach the restrictor.

9.2.1 Glass Removal

- Take out the glazing beads with a putty knife and a glazing spatula (keep track of which bead goes on top, bottom, right, and left part, do not mix them up!). Use protective gloves for safety reasons.

- Remove shims from the IGU (when exchanging the IGU always put shims in the same position, with the same colors as before taking them out). In case of any issues contact Amberline LLC.

- Remove the IGU, preferably using suction cups

9.1.1 Installing the Glass

- Install the IGU with suction cups
- Shim the glass (shim it in the original places; keep track of colors)
- Install glazing beads (in the original places)

9.2 Screens Installation and Maintenance

Screens for PVC windows consist of three elements provided by producer:
- fly screen
- hooks
- screws

Screens installation should be done from inside of the building. Before you start installing them, check if they are in perfect condition – there are no scratches or holes, and the frame is not twisted or broken. If any of these problems appears, please contact Amberline LLC.

Additionally make sure you have enough space to put the screens flat (it is highly recommended to put them on a soft cloth for protection) and that the area around is clean (to prevent product damage).

When installing screens on PVC windows you will have to start by attaching the hooks - screw them in the designated holes (predrilled by the producer). Bottom and side hooks need to be turned along the frame. Then, place the screens in the opening of the window, with the top part going first and pull the bottom part towards you. When the whole screen frame adheres to the window frame you can turn hooks toward the gasket. All hooks should be turned toward window frame. See the drawing below to see each step.

Important!
When sliding hooks on the gasket, always make sure they are loose enough. Never act with too much force as it can destroy the gasket. The whole action should go smoothly. If it not the case, you have to loosen them a little and then continue the action.

When the screen is placed correctly (it overlaps the window frame equally and uniformly), you can tighten the hooks. Always act gently and do not use too much force. Do not use impact screwdriver.

When the installation is finished, check its correctness - fly screens should not press against the gasket too much, but it cannot move either and the window can be open and closed easily without any noise.

Screens installation in pictures:

Maintenance of fly screens:

Cleaning insect screens:

- If possible, remove the screen and place it in bathtub/showe (indoors) or on the lawn/clean hard surface (outdoors)
- Gently spray the screen with water and lightly brush it with a soft bristle brush until clean. Do not use gray or bore water to prevent staining.
- In case of stubborn dirt, gently scrub with a soft bristle brush until clean. Do not use brooms or harsh brushes to prevent scratching the powder coating.
- Rinse the screen thoroughly and let it dry completely.
- Reinstall the screen.
- If a screen can not be removed, gently spray it with water and brush it with a soft bristle brush until clean.

When washing the screen, avoid placing a direct stream of water on the product. Instead, use a sprinkle setting on the nozzle of the hose to prevent water getting inside.

Frequency of cleaning depends on the environment.

9.3 Protecting the glass during installation and at the job site

See the list of the most common glass-related problems that can appear after installation and what to do to prevent them:

A. Breaks

Always treat the glass with particular attention. Never approach it with long, hard items to prevent accidental breaks.

Never put any heavy objects on the glass or windows.

B. Scratches on the surface

Gently clean the debris from building materials with clean water. Never scratch it, try soaking the debris first and then try to remove it gently. Make sure to use a wet, clean, soft cloth to avoid scratching the glass.

C. Metal particles

Never cut the aluminum profile or steel elements close to the glass. Small hot particles will blend into the glass surface.

D. Chipped glass

Lift and put the glass gently. Be particularly careful when removing bows from glazed parts of the window.

Keep the glass far from any hard objects such as stones that may be blown by the wind and cause damage.

E. Thermal breaks

Exposure to strong, direct sunlight may cause thermal breaks. Additionally, if the glass is only partially exposed it increases the chances of experiencing such breaks. This is because heat expands the glass while cold has the opposite effect. It’s a physical phenomenon and is not covered by warranty.

A. Avoid the partial shading of the glass from the outside with roller shutters, blinds, parts of the roof, etc.
B. Remove stickers from the glass – the temperature under stickers is different which may cause thermal breaks.
C. Don’t put dark objects close to the glass inside the building – the part of the glass with a dark object next to it will heat up faster and may cause a thermal break.

9.4 Hardware maintenance

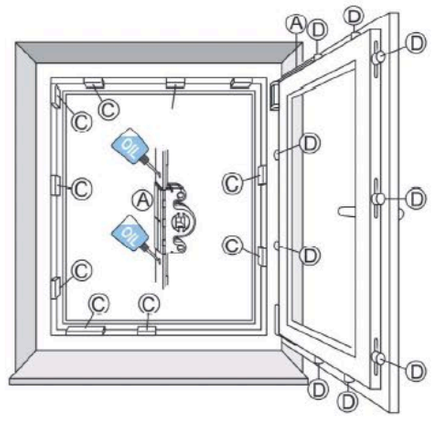
Maintenance

Lubrication points

See figure: Overview of lubrication points

The figure shows the location of possible lubrication points which should be lubricated at least once a year.
Positions A, C, D = lubrication points relevant to function.

Please note: The fitting schematic shown adjacent does not necessarily match the existing fitting. The number of locking positions will vary depending on size and type of the window sash.



Overview of lubrication points

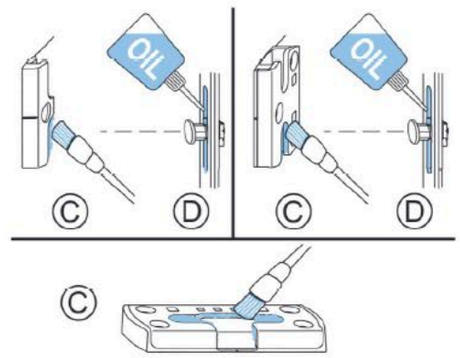
Attention! Risk of injury. The window could fall on removal and thus injure persons. Do not remove the window for maintenance.

Keeps

See figure: Lubrication points

To keep fittings running smoothly, you must lubricate the keeps at least once a year.

- Lubricate the keeps (C) at the run-in side with technical Vaseline or any other suitable grease.
- Coat the running surfaces of the locking bolts (D) with an oil that is free of resins and acids.

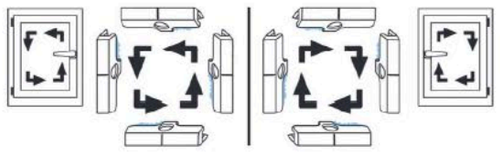


Lubrication points

Ascertaining the run-in sides

See figure: Run-in sides

- Left-handed window; handle right
- Right-handed window; handle left



Run-in sides

Shears

See figure: Shears

All of the shear's contact points with the top rod should be oiled at least once annually.

Note: The shear hinge must not be oiled or greased.

Shears

Source: Winkhaus